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REGISTRAR-GENERAL'S
STATISTICAL REVIEW
OF
ENGLAND AND WALES,
FOR THE YEAR
1921.

(New Annual Series No. 1.)

TEXT.



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PREFACE.

This volume completes the Registrar General's Statistical Review for 1921. It consists of a commentary upon the statistical tables for that year which have already been published in two separate sections (Tables, Part I—Medical, and Tables, Part II—Civil), the three volumes together constituting the annual series which, under the above-mentioned style, now takes the place of the Registrar General's Annual Report.

The origin and objects of the changes made have already been set forth in the Preface to Tables, Part I, and need not now be repeated. The commentary follows the order of the tables themselves; and it may be noted that tables in "Part I—Medical" are numbered (Tables 1, 2, 3, etc.), while tables in "Part II—Civil" are lettered (Tables A, B, C, etc.). Reference to the tables in the commentary will be understood accordingly. Supplementary tables in the commentary itself are designated by Roman numerals.

GENERAL REGISTER OFFICE,
SOMERSET HOUSE,
LONDON, W.C.2.
June, 1923.

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LIST OF CORRIGENDA

IN THE

STATISTICAL REVIEW, 1921.

TABLES: PART I—MEDICAL.

- Table 4. Nos. 108–127. (Class VI) 1917. Males, for 6,643 read 16,643 (p. 16). Females, for 5,051 read 15,051 (p. 16); No. 149, 1915. Females, for 4 read 34 (p. 19); No. 150, 1915. Females, for 6 read 16 (p. 19); Nos. 160–163. (Class XII), 1920. Females, for 2,325 read 12,325 (p. 20).
- „ 5. All Causes, 1919. Males, for 1,522 read 15,022 (p. 23); No. 31, 1912. Persons, for 022 read 1,022 (p. 24); No. 50, 1921. Persons, for 18 read 17 (p. 25); No. 60, 1921. Females, for 43 read 42 (p. 25); No. 60 (b) (2 & 3), 1921. Females, for 9 read 8 (p. 25); No. 141, 1921. Females, for 8 read 9 (p. 31); No. 186, 1921. Females, for 0 read – (p. 34).
- „ 7. Warwickshire. Mortality from Tuberculosis of Respiratory System, 1921, for 633 read 632 (p. 37).
- „ 14. Durham. Total County Boroughs, Infant Mortality, for 85 read 104 (p. 70); Essex. Total County Boroughs, Infant Mortality, for 69 read 70 (p. 71); delete † and corresponding footnote from Warwickshire Administrative County, total Rural Districts and Coventry Rural District death-rates (p. 94); Coventry Rural District death-rate, for 6·7 read 6·3 (p. 94).
- „ 17 & 18. For Causes 40(a) and 40(b) read 40(1) and 40(2) (pp. 147, 163, 179, 195, 214 and 215).
- „ 27. Warwick. Aggregate of R.D.s and Coventry R.D., delete † and corresponding footnote (p. 465); Coventry R.D., attack rates:—Scarlet fever, for 2·85 read 2·69; Diphtheria, for 1·43 read 1·35; Puerperal Fever, for 0·20 read 0·19; Erysipelas, for 0·20 read 0·19 (p. 465).

TABLES: PART II—CIVIL.

- „ D. Birth-rate, December Quarter, 1921, for 20·6 read 20·9 (p. 6).
- „ E. Northampton. Administrative County, total deaths, for 2,154 read 2,514 (p. 31).
- „ E. Pp. 42, 43; correct as above in Table 14, Part I (p. 94).

STATISTICAL REVIEW, 1921.

NOTE.—Of the tables referred to in these Remarks, those numbered in Arabic will be found in "Tables, Part I—Medical," and those lettered in "Tables, Part II—Civil," while those numbered in Roman numerals appear in the Text of this Volume.

DEATHS.

The deaths of 458,629 persons were registered in England and Wales during 1921, 234,291 (viz., 233,540 civilians and 751 non-civilians) of these being males and 224,338 females. This is the smallest number reported in any one year since 1862, when the population was little more than half that of 1921.

The 458,629 deaths correspond to a rate of 12·1 per 1,000 of the estimated population. When standardized* to correct for the deviation of the sex and age distribution of the population, as shown on page 91, from that of the standard population of 1901, this death-rate is reduced to 11·5 (Table 1). But this figure being based upon the estimates of populations at various ages given on page 91, will probably require modification when the tabulation of ages at the recent census has been completed.

As the population of this country in 1901 included relatively few infants and old people it forms a standard exceptionally favourable to low mortality. Its use for this purpose accordingly yields comparatively low standardized rates all round. In order to correct any wrong impression which might arise from this fact, and to provide standardized rates for this country comparable with those of countries using the standard recommended by the International Statistical Institute (a composite population made up of those of a large number of European countries in 1900 or 1901), rates calculated upon the latter are shown in Table XIV, as well as those based on the 1901 English standard, which is that always used elsewhere in this Review. It will be seen that use of the less favourable standard increased the rate from 11·5 to 12·5 per thousand.

* The term "standardized death-rate" means the death-rate corrected for differences of sex and age constitution of the population. For a description of two methods of effecting this "standardization" of recorded death-rates see the Annual Report for 1911 (pages xxvii–xxxi). Standardized death-rates for the sexes separately quoted in this review are based upon the age distribution of persons of undistinguished sex in the general population of England and Wales in 1901. (See Annual Report for 1913, page xx.)

Whatever the method of statement employed, the death-rate of 1921 was again, like that of 1920, lower than any previously recorded, the standardized rate being 0·6 per 1,000 below that of 1920, and 1·5 below that of any previous year (Table 1). Table 2 shows that the credit of this achievement attaches mainly to the first two quarters of the year, both of which returned mortalities lower than any previously recorded for the same quarters, while the rates for the third and fourth quarters were higher than in either of the two preceding years, though lower than any recorded before 1919.

For this result favourable meteorological conditions are no doubt largely responsible. The year as a whole was the warmest and driest (*i.e.* of lowest rainfall) since the commencement in 1849 of publication in this report of the records collected in Table 30. Its first quarter was also the mildest of any first quarter since that date, though little more so than in 1920. Thus two most exceptionally mild winters have been accompanied by mortalities far below any previously experienced at the same time of year. The temperature was high also in each of the other three quarters, though in none of them unprecedentedly so. In the second as in the first it is probable that this helps to account for the low mortality; but in the third quarter high temperature has in the past been associated with high mortality, as the result largely of fatal infantile diarrhoea. Yet, though the temperature in this quarter was higher than in any previous year from 1849 onwards save 1911, the total mortality was lower than in any previous to 1919, while that from infantile diarrhoea, though higher than in any year since 1915 (Table 9), was well below the average prevailing up to that date.

It should be noted, however, that the crude quarterly mortalities in Table 2 do not fully represent the progress registered in 1921. The crude rate for the whole year fell only from 12·4 in 1920 to 12·1 (Table 1) but the standardized rate fell from 12·1 to 11·5. The estimated age distribution of the population is now rapidly becoming less favourable to low mortality owing to increase in the proportions living at ages over 50, for which the death-rates are heavy. In 1921 this factor was reinforced by a larger proportion living at 0–5 than in 1920, and the effect of these two changes has been to bring about the increased reduction of the crude death-rate on standardization just noted. This process may be expected to continue. (The reduction made is a little too great, owing to the changes in the constitution of the population at 0–5, discussed on page 30, making it rather more favourable than in 1920. The method employed ignores this by treating 0–5 as a single age group.)

Mortality of each sex.—Table 1 shows that the mortalities recorded for each sex, crude and standardized alike, were lower in 1921 than in any previous year, though in each case the fall in the standardized rate is much greater than that in the crude. But if

the mortality estimated to have been due to the influenza epidemic of 1919 is deducted from the crude death-rate of females for that year this is reduced to 11·2, comparing with 11·3 in 1921, if influenza had been equally fatal in both years. No precise comparison with 1919 can be made for males, so in view of the rates just quoted for females it seems possible that but for the epidemic mortality would have been much the same in 1919 as in 1921.

The standardized mortality of males regularly exceeds that of females. Up to 1860 or so the excess was only about 9 per cent., but for the 15 years ending with 1914 it averaged about 20 per cent. The increase during the war was due to deterioration by selective recruiting of the civilian population dealt with, as is shown by the subsequent return to the pre-war ratio. Until the results of the 1921 census are available the age group 15–45 must be taken as representing that of war service, even though many of its members were mere children during the war. It is remarkable that at this age excess of male mortality should be substantially less now than before the war. As the health of many men must have been permanently injured by military service it seems necessary to assume that many others must have benefited, in order to explain the improvement for this group of males as a whole.

Table I.—England and Wales : Mortality of Males of Various Ages per cent. of that of Females of Like Age.

—	All Ages (Standardized).	0—	5—	10—	15—	45—	55—	65—	75—	85 and upwards.
1911–14	121	120	102	95	121	130	132	125	117	111
1915* ..	125	122	101	100	149	126	126	125	114	108
1916* ..	131	123	106	99	168	130	128	129	119	107
1917* ..	139	121	104	97	203	136	132	134	124	108
1918* ..	135	114	95	88	179	130	129	130	124	102
1919 ..	125	124	100	98	134	135	126	124	120	100
1920 ..	123	125	102	94	121	140	129	124	116	96
1921 ..	121	125	103	97	116	139	130	121	114	95

* Civilian males only.

The ratios in Table I for 1921, like those for 1920, are particularly high at 0–5 and 45–55, and unprecedentedly low at 85 and upwards. Table 3 reveals no year before 1920 recording an excess of mortality amongst females at the latter period, though normally the male excess is much less than in middle life. The change has now been continuously progressive since 1917. Since then the mortality of males of these advanced ages has fallen by 16 per cent., and that of females only by 4 per cent. (Table 3).

Infant Mortality.

Of the 458,629 deaths registered during the year, 70,250, or 15·3 per cent., were those of infants under one year of age. This is the smallest proportion ever recorded in this country except during the years 1916–19, when, owing mainly to reduction of the birth-rate by the war, it ranged from 10·5 in 1918 to 14·1 in 1916. In 1920 the proportion was 16·4, and in 1901–10, 22·6 per cent.

The rate of infant mortality resulting from these deaths is 83 per 1,000 births. This rate is the lowest hitherto recorded in this country except in 1920, when infant deaths numbered 80 per 1,000 births registered in the year.

The fall which has occurred during the present century has been much more rapid in England and Wales than in either Scotland or Ireland, so that instead of being, as till recently it was, the highest in the British Isles, the English rate is now consistently below that of Scotland, and in 1920 was lower than that of Ireland also.

	1891-1900	1920.	1921.
England and Wales	153	80	83
Scotland	128	92	90
Ireland	104	83	77

Even greater falls, however, are recorded for some of the continental states of Europe during much the same period.

It was pointed out in the Report for 1920 that the conventional measure appreciably understated this mortality, owing to the sudden rise of the birth-rate about the beginning of that year; and a method was described for obtaining a more exact statement of infant mortality by stating the deaths as a proportion, not of the births registered in the same year, but of all the infants born during the same three months as those who died (for births by quarters *see* Table D, and for deaths with details of age Table VII). This correction increased the rate for 1920 from 80 to 84·5, the lowest for any previous year, calculated in the same way, being 91·1 in 1916 and 1917. Since 1920 the birth-rate has again declined, with the result that the proportion of infant deaths to births in 1921 somewhat overstates the mortality, as in other recent years of decreasing birth-rate, especially 1915 and 1917 (Table II). Correction for this reduces the rate for 1921 to 81·2, comparing with 84·5 in 1920, so the fall which commenced with the century has really progressed to an appreciable extent, though the ordinary form of record makes it appear to have sustained a setback. In reality, however, the gain on the rate for 1920 is very much greater than that represented by rates of 84·5 and 81·2. Diarrhoeal mortality was exceptionally low in

1920, whereas the hot dry summer of 1921 occasioned the highest rate recorded from this cause since 1915. Eliminating this difference between the conditions by excluding diarrhoeal mortality from the comparison (Table II) we find the corrected rates (in brackets) from all other causes to have totalled 76 in 1920, and 67 in 1921, a very substantial decrease indeed, as against the apparent increase from 80 to 83.

Table II.—England and Wales : Infant Mortality, 1871–1921, distinguishing Mortality from Diarrhoeal Diseases.

Deaths under 1 year of age per 1,000 Births.

	Diarrhoeal Diseases.	Other Causes.	All Causes.		Diarrhoeal Diseases.	Other Causes.	All Causes.		Diarrhoeal Diseases.	Other Causes.	All Causes.
1871–75	19	134	153	1902	15	118	133	1912	8 (8)	87 (87)	95 (95)
1876–80	16	129	145	1903	18	114	132	1913	19 (19)	89 (90)	108 (109)
1881–85	14	125	139	1904	30	115	145	1914	17 (17)	88 (87)	105 (104)
1886–90	17	128	145	1905	21	107	128	1915	15 (15)	95 (91)	110 (106)
1891–95	20	131	151	1906	31	101	132	1916	11 (10)	80 (81)	91 (91)
1896–00	31	125	156	1907	13	105	118	1917	10 (9)	86 (82)	96 (91)
1901–05	23	115	138	1908	20	100	120	1918	10 (10)	87 (88)	97 (98)
1906–10	18	99	117	1909	13	96	109	1909	9 (9)	80 (84)	89 (93)
1911–15	19	91	110	1910	13	92	105	1920	8 (9)	72 (76)	80 (85)
1916–20	9	81	90	1911	36 (36)	94 (93)	130 (129)	1921	14 (14)	69 (67)	83 (81)

The remarkable absence of all tendency to decline during the nineteenth century as well as the rapidity of the fall since its close will be noted.

The rate of progress has been very different in different portions of the first year of life. Records are now available for forty-one years of the numbers of deaths under three months of age and at 3–6 and 6–12 months respectively. The deaths at each of these ages per 1,000 births registered and the proportions of the total infant mortality occurring at each age during these years are shown in Table III, the corrected figures for the last eleven years being shown in brackets.

The mortality returned for the first three months of life is lower than any previously recorded. That for the second three rose somewhat in 1921, owing, no doubt, to the hot summer, since mortality from diarrhoea is at its maximum at this age (Table 10). The corrected rate for these three months leapt up from 8·8 per 1,000 corresponding births in the second quarter to 16·9 in the third (Table IV). The mortality of the second six months of life, as measured by the amended figures in Table III, was considerably lower than in any previous year.

It is necessary, however, to examine the returns in quarterly form to realize fully the great advance recorded for 1921 until the hot summer sent the death-rate up in the third quarter. Table IV shows that after the first four weeks there is no portion of the first year of life at which the corrected rates for the first two quarters were not lower than any of their predecessors. The corrected

Table III.—England and Wales : Age Distribution of Infant Mortality, 1881-1921.

		Deaths per 1,000 Births registered.						Proportion of Deaths at each age.					
		Under 4 weeks.	4 Weeks to 3 months.	Total under 3 months.	3-6 months.	6-12 months.	Total under 1 year.	Under 4 weeks.	4 Weeks to 3 months.	Total under 3 months.	3-6 months.	6-12 months.	Total under 1 year.
1881-1885	..	—	—	67	28	44	139	—	—	484	199	317	1,000
1886-1890	..	—	—	69	30	46	145	—	—	480	204	316	1,000
1891-1895	..	—	—	74	31	46	151	—	—	488	207	305	1,000
1896-1900	..	—	—	74	34	48	156	—	—	477	215	308	1,000
1901-1905	..	—	—	70	28	40	138	—	—	505	202	293	1,000
1906-1910	..	40	23	63	22	32	117	344	194	538	188	274	1,000
1911-1915	..	39 (39)	20 (20)	59 (59)	20 (20)	31 (30)	110 (109)	356	185	541	180	279	1,000
1916-1920	..	37 (37)	17 (17)	54 (54)	14 (15)	22 (23)	90 (92)	412	183	595	160	245	1,000
1905	..	41	25	66	25	37	128	326	194	520	193	287	1,000
1906	..	41	26	67	27	38	132	317	194	511	203	286	1,000
1907	..	42	23	65	21	32	118	346	198	544	181	275	1,000
1908	..	40	24	64	24	32	120	335	200	535	196	269	1,000
1909	..	41	20	61	19	29	109	366	187	553	177	270	1,000
1910	..	38	20	58	19	28	105	365	190	555	178	267	1,000
1911	..	40 (40)	25 (25)	65 (65)	26 (26)	39 (38)	130 (129)	313	190	503	201	296	1,000
1912	..	38 (38)	18 (18)	56 (56)	15 (15)	24 (24)	95 (95)	405	186	591	156	253	1,000
1913	..	39 (40)	20 (20)	59 (60)	20 (20)	29 (29)	108 (109)	364	188	552	182	266	1,000
1914	..	39 (38)	19 (19)	58 (57)	19 (19)	28 (28)	105 (104)	368	185	553	179	268	1,000
1915	..	38 (38)	19 (19)	57 (57)	19 (18)	34 (31)	110 (106)	346	173	519	174	307	1,000
1916	..	37 (37)	17 (17)	54 (54)	15 (15)	22 (22)	91 (91)	404	185	589	166	245	1,000
1917	..	37 (37)	17 (17)	54 (54)	16 (15)	26 (22)	96 (91)	388	181	569	167	264	1,000
1918	..	36 (37)	17 (17)	53 (54)	16 (16)	28 (28)	97 (98)	376	175	551	163	286	1,000
1919	..	40 (41)	15 (16)	55 (57)	13 (14)	21 (22)	89 (93)	446	174	620	148	232	1,000
1920	..	35 (35)	16 (16)	51 (51)	12 (13)	17 (21)	80 (85)	441	196	637	156	207	1,000
1921	..	35 (35)	15 (15)	50 (50)	14 (14)	19 (17)	83 (81)	427	179	606	169	225	1,000

Table IV.—England and Wales : Infant Deaths at various Ages during each Quarter of the years 1911–21,
per 1,000 corresponding Births.

		1st Qr.	2nd Qr.	3rd Qr.	4th Qr.	Year.	1st Qr.	2nd Qr.	3rd Qr.	4th Qr.	Year.	1st Qr.	2nd Qr.	3rd Qr.	4th Qr.	Year.
		Under 4 Weeks.										4 Weeks—3 Months.				3–6 Months.
1911	..	41.0	36.3	41.8	43.7	40.6	21.8	14.5	38.7	23.5	24.7	18.7	13.9	52.3	18.3	25.9
1912	..	43.8	37.4	34.5	38.1	38.4	24.5	14.8	14.2	17.5	17.7	19.2	12.7	12.4	15.1	14.9
1913	..	44.7	37.8	35.6	40.0	39.5	23.2	14.8	21.3	22.2	20.3	20.2	13.7	24.4	20.8	19.8
1914	..	43.0	37.6	34.4	39.2	38.5	21.8	14.7	21.8	19.0	19.3	19.7	13.1	24.4	17.7	18.7
1915	..	42.8	35.9	32.6	39.6	37.7	23.7	14.8	16.0	20.2	18.6	21.7	14.0	18.2	19.1	18.2
1916	..	41.4	35.4	31.7	39.5	36.9	20.2	13.8	13.9	19.9	16.9	17.7	12.5	14.4	16.1	15.2
1917	..	44.6	37.0	31.6	35.3	37.1	23.1	13.1	13.8	17.6	16.9	19.9	11.6	12.9	15.5	15.0
1918	..	38.0	34.0	33.3	41.0	36.6	22.3	14.3	15.2	17.0	17.1	19.2	11.9	15.8	17.6	16.1
1919	..	47.5	38.5	35.9	39.6	40.4	27.1	11.1	12.6	15.3	16.4	23.0	10.3	12.2	12.1	14.4
1920	..	38.4	35.4	30.8	35.7	35.0	21.7	14.8	10.9	15.0	15.5	18.1	12.4	8.8	12.7	13.0
1921	..	40.2	34.2	31.3	35.3	35.2	19.4	10.9	14.8	14.1	14.7	16.0	8.8	16.9	13.0	13.7
		6–9 Months.										9–12 Months.				Total under one Year.
1911	..	17.3	13.3	39.8	12.3	20.6	16.7	13.6	28.4	11.1	17.4	115.5	91.7	201.1	108.8	129.2
1912	..	15.0	12.1	9.7	12.9	12.5	12.9	11.1	8.7	12.8	11.4	115.3	88.0	79.5	96.5	94.7
1913	..	17.9	12.4	17.8	14.5	15.7	16.0	12.3	13.9	12.1	13.6	122.0	90.9	112.9	109.7	108.9
1914	..	16.2	12.2	18.9	12.7	15.0	13.6	11.8	14.6	11.9	13.0	114.3	89.1	114.0	100.5	104.4
1915	..	20.7	14.6	14.4	14.2	16.0	20.7	16.0	11.6	12.5	15.2	129.6	95.3	93.0	105.8	105.8
1916	..	14.5	11.4	10.3	10.6	11.7	13.3	10.7	7.9	8.9	10.3	107.2	84.0	78.2	95.1	91.1
1917	..	15.3	12.1	8.9	9.9	11.6	13.8	11.7	7.8	8.9	10.6	116.9	85.5	75.1	87.3	91.1
1918	..	17.2	12.2	11.4	16.7	14.4	15.9	13.1	10.2	15.3	13.7	112.6	85.8	85.8	107.7	97.9
1919	..	21.2	9.2	8.2	8.2	11.8	18.7	8.3	6.4	7.6	10.3	137.5	77.3	75.2	82.8	93.2
1920	..	16.4	12.2	6.9	8.3	11.0	14.7	12.5	5.5	6.9	10.0	109.3	87.4	63.0	78.7	84.5
1921	..	11.7	7.0	11.3	8.7	9.7	9.5	6.5	7.5	7.7	7.8	96.8	67.5	81.9	78.9	81.2

rates for the first twelve months of life as a whole show a very substantial decrease—about 10 per 1,000 births—below any previously recorded in the first and second quarters. For the fourth quarter the low record set up in 1920 is practically maintained, but the rate for the third was higher than those for five out of the ten preceding years.

Distribution of Mortality.—Table V shows how infant mortality was distributed in 1921 between the sexes and throughout the country.

Table V.—Distribution of the Mortality of Infancy throughout England and Wales, 1921.

	Deaths under 1 year of age per 1,000 Births.														
	Males.					Females.					Both Sexes.				
	North.	Midlands.	South.	Wales.	England and Wales.	North.	Midlands.	South.	Wales.	England and Wales.	North.	Midlands.	South.	Wales.	England and Wales.
London	—	—	90	—	90	—	—	71	—	71	—	—	81	—	81
County Boroughs ..	113	95	76	97	103	88	74	64	73	81	101	85	70	85	92
Other Urban Districts ..	107	83	72	102	92	83	63	53	81	70	95	73	63	92	81
Rural Districts ..	103	71	60	90	79	78	54	47	70	60	90	63	54	80	70
All Areas	109	84	79	98	93	85	65	62	76	72	97	75	71	87	83

Comparison of this table with that for 1920, which recorded the lowest rates hitherto returned for each class of area, shows that the apparent increase in 1921 (80 to 83) applies most to London and the South of England generally, and next to them the Midlands, while for the North there is a slight fall even in the conventional rate (98 to 97). The increase shown in the table applies to both urban and rural districts, but not to the county boroughs, which are very largely situated in the North. But, notwithstanding this movement towards equality, the rates for the large towns and for the North of England remain greatly in excess, the highest rate in the table for infants of both sexes being 101, in the county boroughs of the North, and the lowest 54, in the rural districts of the South. This maximum and minimum form one of the most constant features of the yearly records. From 1911 onwards there has been no year in which the infant mortality of the Southern rural districts was not the lowest recorded in the corresponding table for each sex, and with two trifling exceptions in 1912 and 1914, the converse statement applies to the Northern county boroughs.

Table 11 compares classes of administrative areas in respect of infant mortality with distinction of cause and legitimacy. The total mortality in the urban areas as a whole exceeded that in the rural by 24 per cent. Table VI shows that this is about the usual excess, and that for 1921 it applies in almost equal degree to

all ages over three months, though as a rule it increases with age. The excess of 7 per cent. for the first four weeks was unusually high, being the largest in the eleven years for which comparison can be made.

Table VI.—Infant Mortality in Urban Districts per cent. of that in Rural Districts, 1911–21.

			Under 4 Weeks.	4 Weeks— 3 Months.	3–6 Months.	6–9 Months.	9–12 Months.	Total under 1 year.
1911	..	..	106	136	145	155	164	132
1912	..	..	103	123	141	145	157	122
1913	..	..	105	141	144	149	157	129
1914	..	..	106	138	150	143	149	128
1915	..	..	103	128	148	153	154	128
1916	..	..	102	133	150	151	156	125
1917	..	..	99	124	146	148	166	122
1918	..	..	104	134	152	147	158	128
1919	..	..	102	118	130	124	129	113
1920	..	..	102	134	151	153	164	124
1921	..	..	107	125	149	144	148	124

A statement of infantile deaths and mortality for each administrative area in the country will be found in Table 14; while Table 13 supplements this information for each metropolitan and county borough, and for the urban and rural portion of each administrative county, by distinctions of age and of legitimacy.

Mortality of Separate Weeks and Months of Age.—Tables VII and VIII continue the analysis of infant mortality by detail of age initiated in 1905 with distinction of registration counties mainly urban and mainly rural, and expanded in 1917 to the degree of geographical distinction now in use. Distinctions of sex and legitimacy are shown only for England and Wales as a whole, but are available for each of the populations dealt with. Some of the facts and rates applying to the illegitimate will be found in Table 13.

Table VIII, like its four predecessors, shows that the decrease of mortality from North to South is well marked from the very first day of life. The excess in the North over the Southern rate on this day was 20 per cent., the lowest excess for the five years being 17 per cent. in 1917, and the highest 33 per cent in 1920. The change since 1920 is almost entirely accounted for by increase of the Southern rate from the very low figure of 8·90 to 9·82, while the Northern rate fell from 11·82 to 11·76. There was also a substantial rise in the Midlands, but not in Wales. In each of the five years open to comparison much the highest rate for the first day has been returned by the rural districts of the North. As is usually the case, more deaths of illegitimate infants occurred on

Table VIII.—Infant Mortality by Week and Month of Age, 1921.

Proportion of Deaths to 1,000 Births.

	Under 1 Day.	1-7 Days.	Weeks.			Total under 4 Weeks.	4 Weeks to 2 Months.	Months.										Total under 1 Year.	
			1-2	2-3	3-4			2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12		
England and Wales.	All Infants	12.15	13.21	6.13	5.12	3.40	40.01	9.64	7.11	6.14	5.20	4.55	3.86	3.74	3.51	3.22	3.01	2.86	92.85
		9.34	9.97	4.62	3.75	2.59	30.27	7.48	5.36	4.57	4.11	3.37	3.11	2.96	2.90	2.67	2.75	2.61	72.16
		10.78	11.62	5.40	4.45	3.00	35.25	8.58	6.26	5.38	4.67	3.97	3.50	3.36	3.21	2.95	2.89	2.74	82.76
	Legitimate	11.48	12.84	5.96	4.98	3.26	38.52	9.24	6.65	5.76	4.91	4.41	3.68	3.63	3.38	3.10	2.95	2.82	89.05
		8.74	9.71	4.48	3.64	2.47	29.04	7.07	4.97	4.25	3.79	3.22	2.95	2.90	2.76	2.60	2.68	2.53	68.76
		10.15	11.31	5.24	4.33	2.87	33.90	8.18	5.83	5.03	4.36	3.83	3.33	3.27	3.08	2.85	2.82	2.68	79.16
	Illegitimate	26.32	20.71	9.87	8.04	6.51	71.45	18.01	16.94	14.40	11.24	7.48	7.47	6.21	6.21	5.75	4.12	3.87	173.15
		21.73	15.71	7.65	6.01	5.01	56.11	15.82	13.55	11.07	10.76	6.54	6.38	4.22	5.85	4.17	4.32	4.22	143.01
		24.07	18.26	8.78	7.04	5.77	63.92	16.93	15.28	12.76	11.01	7.02	6.94	5.23	6.03	4.97	4.22	4.04	158.35
All Areas	North	11.76	13.18	6.39	5.31	3.48	40.12	10.14	7.35	6.31	5.27	4.95	4.19	4.06	4.03	3.75	3.69	3.60	97.46
	Midlands	10.54	11.24	4.94	4.21	2.84	33.77	7.78	5.61	4.49	4.05	3.31	3.00	2.92	2.85	2.44	2.34	2.18	74.74
	South	9.82	9.66	4.50	3.51	2.45	29.94	7.11	5.35	5.06	4.34	3.29	3.02	2.89	2.56	2.55	2.32	2.16	70.59
London	Wales	10.47	12.45	5.56	4.51	3.26	36.25	9.39	6.79	5.71	5.44	4.39	3.82	3.46	3.08	2.64	3.20	2.89	87.06
		9.36	9.08	4.67	3.75	2.49	29.35	7.98	6.30	6.64	5.84	4.47	3.89	3.70	3.37	3.34	3.22	2.80	80.90
County Boroughs	North	11.60	12.85	6.47	5.29	3.28	39.49	10.23	8.00	7.00	5.79	5.22	4.51	4.30	4.17	4.03	3.96	3.94	100.64
	Midlands	10.69	11.62	5.51	4.85	3.34	36.01	8.88	6.54	5.44	4.76	4.10	3.51	3.45	3.54	3.21	2.82	2.69	84.95
	South	10.00	11.15	4.27	3.18	2.99	31.59	7.63	5.33	4.60	3.80	2.63	3.18	2.88	2.30	2.19	2.15	2.15	70.43
Other Urban Districts	Wales	10.92	12.69	5.61	4.64	2.47	36.33	8.90	5.99	6.13	5.53	3.81	3.59	2.99	2.99	2.62	3.59	2.77	85.24
	England and Wales	11.13	12.28	5.93	4.93	3.24	37.51	9.51	7.20	6.24	5.27	4.57	4.03	3.84	3.75	3.53	3.42	3.33	92.20
	North	11.57	13.76	6.64	5.52	3.67	41.16	10.30	6.51	5.67	4.64	4.84	3.92	3.93	3.88	3.41	3.50	3.39	95.15
	Midlands	10.51	11.12	4.99	4.06	2.72	33.40	7.50	5.54	4.72	3.89	3.13	2.96	2.93	2.60	2.18	2.35	2.05	73.25
	South	10.48	10.42	4.49	3.32	2.22	30.93	6.12	4.71	4.02	3.02	2.26	2.30	2.18	1.96	2.08	1.67	1.43	62.68
Rural Districts	Wales	10.15	12.38	5.66	4.52	3.53	36.24	10.15	7.38	6.13	5.92	5.02	4.26	4.20	3.47	2.68	3.09	3.18	91.72
	England and Wales	10.83	12.08	5.56	4.50	3.06	36.03	8.55	5.96	5.09	4.25	3.81	3.34	3.30	3.04	2.65	2.72	2.55	81.29
	North	12.87	13.22	5.47	4.88	3.81	40.25	9.38	6.81	5.13	4.69	4.08	3.54	3.42	3.81	3.47	3.10	2.76	90.44
	Midlands	10.33	10.85	4.10	3.56	2.34	31.18	6.71	4.47	2.87	3.33	2.51	2.37	2.21	2.26	1.79	1.67	1.67	63.04
	South	9.95	9.14	4.27	3.39	2.25	29.00	5.73	3.68	2.52	2.49	1.96	1.51	1.67	1.38	1.35	0.93	1.43	53.65
	Wales	10.74	12.46	5.34	4.39	3.33	36.26	8.36	6.30	4.66	4.50	3.65	3.18	2.43	2.43	2.59	3.12	2.43	79.91
	England and Wales	10.91	11.25	4.61	3.94	2.79	33.50	7.33	5.07	3.55	3.60	2.90	2.55	2.41	2.46	2.19	2.02	1.97	69.55

the first day than during the remainder of the first week, whereas with the legitimate this ratio is reversed. London and the South generally, however, record greater mortality of all infants on the first than during the six succeeding days. But in their case this is due to a specially low rate in the second period, while in the case of the illegitimate it is due to a specially high one on the first day of life.

The comparisons suggested by Table VIII, are facilitated by Table IX, which, with certain condensation of ages, states the rates recorded for the various populations as ratios to those for England and Wales as a whole, and thus serves to analyse by age the comparison made in Table V for the first year of life as a whole.

The facts brought out in this table may be considered from three points of view according as they measure at each age the excess mortality (1) of males over that of females, (2) of the towns over that of the rural districts, and (3) of the North over the South of England.

(1) The excess mortality of males is strongly marked from birth, reaching a maximum, in 1921, in the third week. It does not vary much during the first six months, but diminishes greatly during the second.

(2) The excess mortality of the towns is little marked on the first day, but becomes rapidly established thereafter, and continues to increase throughout the year, reaching a maximum in the last three months, as tested by comparison of the county boroughs with the rural districts. This comparison differs somewhat from that provided by Table VI, on account of the peculiar age incidence of mortality on London infants. In the first week the London rates are the lowest returned in Table IX, as happened also in 1920. After the first month this advantage is rapidly lost, and in the second three months the London rate is in large excess, mainly as the result of deaths from diarrhoea (Table 11), which later on declines. The special excess in the second trimester is a peculiarity of the year, presumably attributable to diarrhoea, but an extraordinarily favourable mortality in the first month or two, followed by excess afterwards (though less than for the county boroughs) is the usual experience of London.

(3) The excess mortality of the North over the South is greater than that of the county boroughs over the rural districts, amounting for the whole twelve months to 38 as against 33 per cent. It is, as already noted, strongly marked from the very first day of life, when it amounts to 20 per cent., reaching 34 per cent. for the first four weeks when that for county boroughs over rural districts is only 12 per cent., and a maximum of 57 per cent. in the fourth trimester as against 66 per cent. excess for county boroughs over the rural districts. The Northern excess is thus much more uniform as well as greater than the urban. The Midlands are as a rule intermediate in position between North and South, but at 3-6 months their mortality was considerably the lowest, entirely

as the result of fewer deaths from diarrhœa (Table 12). Wales ranks, as in regard to many other matters, between the North and the Midlands. The constancy as well as the degree of the decrease in mortality from North to South is very great. When the comparison is made between districts of similar class in each case the advantage of the Midlands in the second three months disappears (thus showing this to be due to the heavy diarrhœal mortality in London) and exceptions to the rule are few and unimportant, as has been the case also in each of the previous four years. There is no exception, at any age period distinguished in Table 12, to the Northern maximum, so far as England is concerned.

Causes of Infant Mortality.—The causes of infant mortality are set forth in Tables 8–12, which compare the records of 1921 with those of previous years, and show the incidence of mortality from each cause upon infants distinguished by sex, age, legitimacy, class of area, and section of the country. From these tables has been prepared the comparison in Table X between the mortality from the chief causes distinguished at various ages in 1916–20 and in 1921. Comparison with 1920 is omitted so far as the separate causes are concerned both because it is desirable to have a more stable basis than the record of a single year can provide, and because, as will be seen from the first section of the table, comparison of the crude rates for the later months with those for 1920 would be singularly misleading, the crude rates for all causes in 1921 showing a substantial increase over those for 1920, whereas the revised show a substantial decrease. Crude rates only have been calculated for the separate causes, so their comparison is made with 1916–20 alone, where the total rates show it to be less misleading, though even in this case the tendency to understatement of decline in the later months should be borne in mind.

All the causes in the table except diarrhœa and congenital defects show a decline in mortality under one year. The considerable increase from diarrhœa, which applies to all ages, but particularly 3–6 months, has already been dealt with, and that from congenital defects is trifling. The chief decreases are from bronchitis and pneumonia (3·8 per 1,000 births), congenital debility and icterus (2·3), convulsions (1·7), and measles (1·1), and in each case these are common to all ages.

The decline under the first named heading is even more considerable in reality than shown in the table, for fully half of it occurred during the second six months of life, for which the reduction of mortality is under-stated by the crude rates. That from congenital debility and icterus is seen from Table 9 to represent the continuance of a movement which has been in steady progress for many years, and which is probably due in great measure to improvement in certification. This title in the revised International List corresponds to the “Atrophy, Debility and Marasmus” of the Infant

Mortality tables of previous reports. Besides the 6,250 deaths allocated in Table 8 to the indefinite heading "Congenital debility and sclerema" (amongst which it has not been thought worth while any longer to distinguish the deaths from sclerema, which numbered only 24 in 1920, or those from "want of breast milk," which may be regarded as signifying digestive debility, and is a term rapidly disappearing from our certification, the numbers falling from 301 deaths in 1911 to 94 in 1920) it includes 614 from

Table X.—England and Wales : Comparison of Infant Mortality Rates in 1921 with those of recently preceding years.

	Age.					
	Under 4 weeks.	4 weeks to 3 months.	3-6 months.	6-9 months.	9-12 months.	Under 1 year.
	Increase or Decrease of Mortality in 1921, per cent. of that in 1920					
Crude	—	— 5	+12	+ 8	+18	+ 4
Revised.. ..	+ 1	— 5	+ 6	—13	—22	— 4
	Increase or Decrease of Mortality in 1921, per cent. of that in 1916-20.					
	— 5	—10	— 3	—13	—18	— 8
	— 5	—11	— 7	—20	—29	—11
	Increase or Decrease from various Causes, as compared with 1916-20.					
	— 0.01	— 0.02	— 0.07	— 0.35	— 0.69	— 1.14
	— 0.01	+ 0.05	— 0.05	— 0.14	— 0.15	— 0.30
Measles	+ 0.02	+ 0.01	— 0.01	— 0.01	— 0.02	— 0.01
Whooping cough	— 0.04	— 0.06	— 0.19	— 0.26	— 0.28	— 0.83
Other common infectious diseases	+ 0.36	+ 0.88	+ 1.76	+ 0.98	+ 0.47	+ 4.45
Influenza.. ..	— 0.15	+ 0.14	+ 0.02	— 0.01	—	—
Diarrhoea and enteritis	+ 0.05	— 0.02	+ 0.01	— 0.04	+ 0.01	+ 0.01
Premature birth	— 1.35	— 0.62	— 0.22	— 0.06	— 0.05	— 2.30
Congenital defects	— 1.45	— 0.50	— 0.19	— 0.11	— 0.04	— 2.29
Congenital debility, sclerema & icterus	— 0.01	— 0.08	— 0.12	— 0.12	— 0.13	— 0.46
Developmental and wasting diseases	— 0.44	— 0.52	— 0.35	— 0.24	— 0.15	— 1.70
Tuberculous diseases	— 0.24	— 0.79	— 0.87	— 1.09	— 0.83	— 3.82
Convulsions	— 0.06	— 0.11	— 0.05	— 0.02	—	— 0.24
Bronchitis and pneumonia	+ 0.10	— 0.45	— 0.25	— 0.21	— 0.03	— 0.84
Suffocation in bed and not stated	— 1.78	— 1.59	— 0.39	— 1.57	— 1.85	— 7.18
Other causes	—	—	—	—	—	—
All causes	—	—	—	—	—	—
	Percentage.					
	— 50	— 40	— 54	— 66	— 67	— 65
	— 13	+ 9	— 7	— 18	— 17	— 10
Measles	+200	+ 50	— 25	— 10	— 13	— 3
Whooping cough	— 50	— 35	— 61	— 65	— 72	— 61
Other common infectious diseases	+ 43	+ 36	+ 57	+ 56	+ 39	+ 48
Influenza.. ..	— 1	+ 9	+ 11	— 33	—	—
Diarrhoea and enteritis	+ 1	— 2	+ 3	— 24	+ 10	—
Premature birth	— 23	— 25	— 17	— 14	— 24	— 22
Congenital defects	— 5	— 10	— 10	— 17	— 13	— 6
Congenital debility, sclerema & icterus	— 33	— 35	— 22	— 20	— 22	— 23
Developmental and wasting diseases	— 16	— 33	— 31	— 31	— 26	— 25
Tuberculous diseases	— 16	— 20	— 19	— 24	— 20	— 21
Convulsions	— 17	— 41	— 33	— 50	—	— 29
Bronchitis and pneumonia	+ 3	— 20	— 13	— 14	— 3	— 8
Suffocation in bed and not stated	— 5	— 10	— 3	— 13	— 18	— 8
Other causes	—	—	—	—	—	—
All causes	—	—	—	—	—	—

the relatively definite cause "icterus neonatorum." This portion of its contents is seen from Table 9 to be little affected by the rapid decline applying to the remainder of the International title. The mortality attributed to convulsions is also declining from the same cause and here again the movement is of long standing. The great reduction which has occurred from these

numerically important causes, by transfer to other and more definite headings, must be taken into account when considering the latter, decline from which is to that extent masked.

The percentage decline is greatest from measles, which Table 9 shows to have caused a much lower mortality than even in 1919, when this rate was lower by far than in any previous year. Next to measles and influenza, from which large fluctuations must be expected, comes suffocation in bed, with a decline of 29 per cent. below the five years average.

This heading includes 502 out of the 541 deaths allocated to the International heading No. 180, accidental mechanical suffocation. It was shown in the Report for 1916 that mortality from this cause, which had varied comparatively little during the previous 30 years, rapidly declined in 1915 and 1916. Since then this movement has progressed much further, the rate per 1,000 births having fallen from 1.40 in 1914 to 0.59 in 1921. (Table 9.) The change has been far greater in the south of England than in the north. So recently as 1917, when Table 12 was first prepared, the mortality of the South was in large excess for all types of area, and most of all in London, where it was nearly twice that of England and Wales. (1.95 as against 1.05.) Now Table 12 shows the decreased mortality to be no higher in the South than in the North, and not much higher in London than in the country at large. It is difficult to avoid associating the change with the war, with the outbreak of which its commencement coincided, and the decreased consumption of alcohol at once suggests itself as a possible explanation. This will hardly, however, account for the continuing progress of the change or for its concentration on London and the South. It must be remembered that all such deaths are investigated by Coroners, so that any change in the attitude towards such cases of these officials might materially affect the returns. As these deaths appear to have attracted a good deal of attention of late years from Coroners, at all events in London, it seems possible that some such change of attitude on their part may help to account for the remarkable change in the returns.

Convulsions, with a decline of 25 per cent. from the five years average, comes next to overlying in extent of percentage decline (Table X). In this case the process of transfer to more definite headings is of long standing and is still in active operation. Table 9 shows that only ten years earlier, in 1911, the rate, 9.68 per thousand births, was almost double that of 1921. That this process has advanced much further in some parts of the country than in others is shown by Table 12, from which it may be seen that the mortality so ascribed varied from 2.68 in the South and 2.20 in London to 10.19 in Wales. So far as England is concerned the rate is lowest in the South and highest in the North in each class of area, but in each, and especially in the rural districts, where it reaches 11.75, it is in great excess in Wales.

Tubercle comes next to convulsions in order of proportionate decline, with a reduction of 23 per cent. This fall represents the continuation of a process so remarkable that it may be worth while to examine it in some detail, and to compare it with the record for tubercle at all ages discussed on pages 51–56. The mortality attributed to infantile tuberculous disease during the past sixty years is as follows:—

Table XI.—England and Wales : Infant Mortality from Tuberculosis, 1861–65 to 1921.

				Nervous System.	Intestines and Peritoneum.	Other Sites.	All Sites.
1861–1865	..	..	..	3·82	3·41	2·06	9·29
1866–1870	..	..	..	3·43	4·17	2·19	9·79
1871–1875	..	..	..	3·15	4·42	2·11	9·68
1876–1880	..	..	..	3·03	4·51	2·22	9·76
1881–1885	..	..	..	2·39	4·36	2·03	8·78
1886–1890	..	..	..	2·25	4·46	2·30	9·01
1891–1895	..	..	..	2·17	4·05	2·27	8·49
1896–1900	..	..	..	2·00	3·40	1·83	7·23
1901–1905	..	..	..	1·58	2·66	1·67	5·91
1906–1910	..	..	..	1·41	1·75	1·25	4·41
1911–1915	..	..	..	1·08	1·19	0·81	3·08
1916–1920	...	..	..	0·84	0·62	0·54	2·00
1921 ..	..	..	..	0·70	0·45	0·39	1·54

The rates for tubercle of the nervous system—practically, of course, tuberculous meningitis—are known not to be comparable over the whole of the period dealt with, and a portion of the decline under that heading results from changes in classification. Before 1881 all deaths from hydrocephalus were assigned to tubercle, but from that date onwards deaths from chronic hydrocephalus were allocated elsewhere. And similarly in 1901 “hydrocephalus,” unqualified as acute or chronic, was excluded from tuberculosis, leaving only “acute hydrocephalus” so allocated. Both changes, it will be seen, have left a distinct impress upon the figures in the table. It is not possible now to measure more precisely their effect at the time by showing the mortality under the present classification during the nineteenth century, but the present mortality under the old heading can be stated. In addition to 595 infant deaths from nervous tubercle in 1921 there were 183 from congenital hydrocephalus. Hydrocephalus not returned as either acute or congenital is now allocated to ‘other nervous diseases,’ but these deaths are very few and not generally of infants. In 1913, for which year the record is available, they numbered seven, of which only one occurred at less than one year of age.

It follows from this that if all the deaths withdrawn from infantile tubercle by the changes of classification in 1881 and 1901 were restored the mortality in 1921 would be increased only from

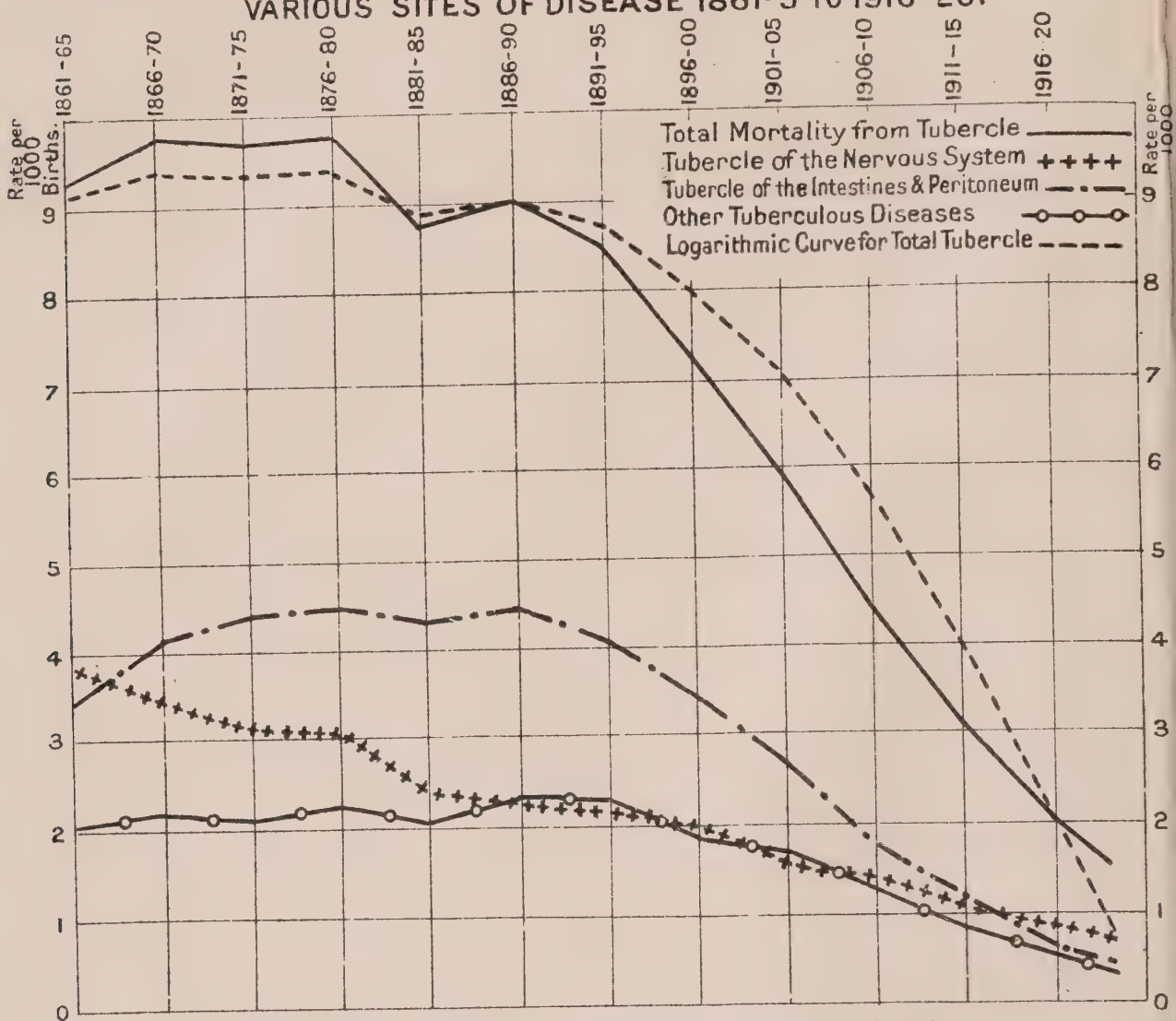
.70 to .92 per thousand births, but it is evident from Table XI that at the time they were made these changes must have effected the transfer of a much larger mortality than .22. Hydrocephalus in fact, or rather, in many cases, "water on the brain," used to be returned with much greater freedom, and probably much more looseness, than at present. Congenital hydrocephalus is a definite form of return, the frequency of which has varied little during the twenty years for which these deaths have been separately abstracted, but it seems probable that many other deaths were at one time returned as due to hydrocephalus on evidence which would not now be accepted.

No other changes in classification can be quoted as having affected the rates in Table XI, but it may not be without significance that "*tabes mesenterica*," now so rare a form of return as no longer to be worth separate record, was so recently as 1901 the commonest form of record for deaths from abdominal tubercle. To any one who knows how freely and on what slight evidence the term "consumption of the bowels" has been applied to infantile disease it must appear doubtful how far the high mortality ascribed to abdominal tubercle during the last century, since reduced by almost 90 per cent., was indicative of disease due to the tubercle bacillus.

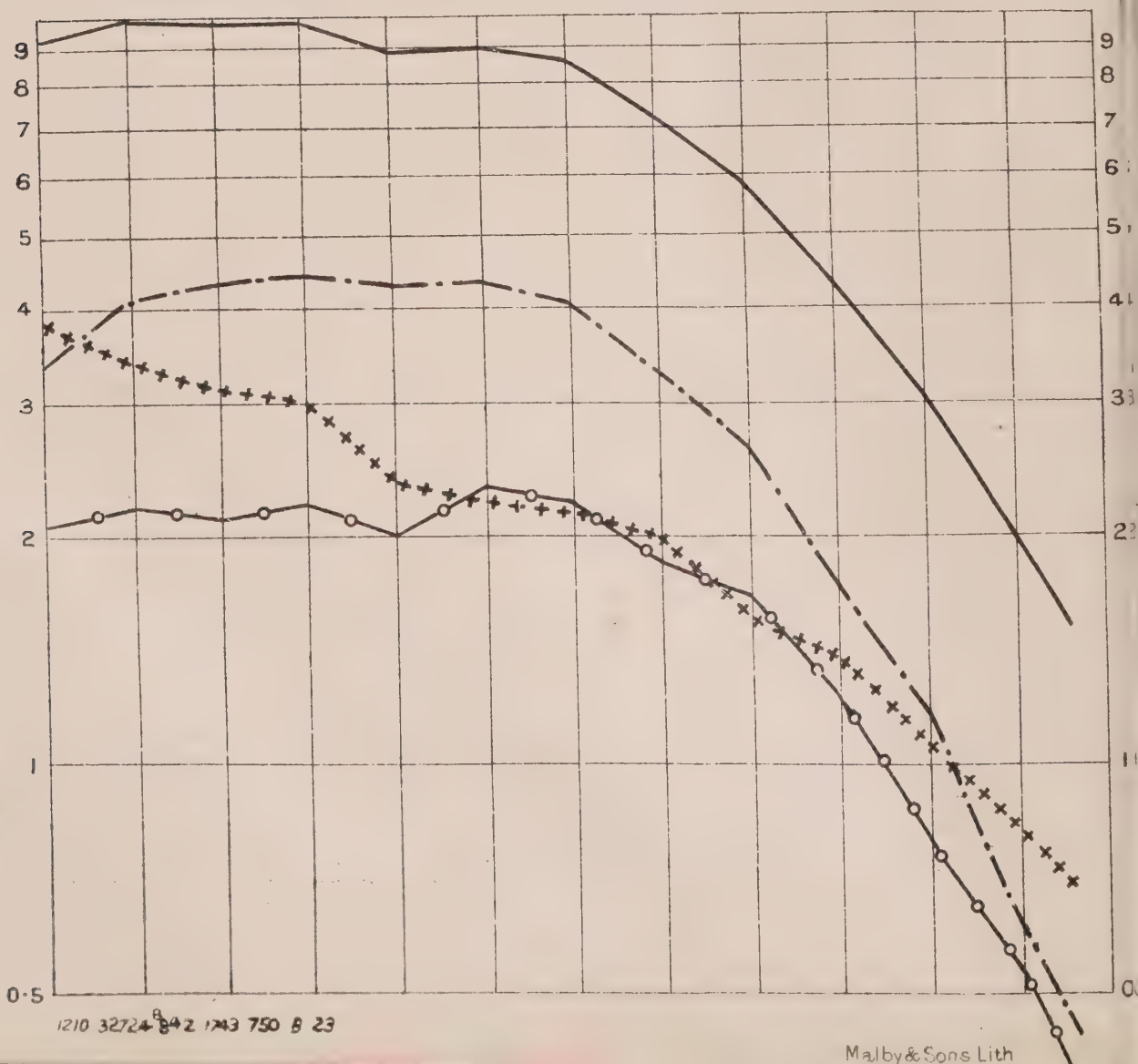
Diagram 1, in which the rates from Table XI are plotted both on the ordinary and on the logarithmic scales, brings out the remarkable rapidity of the fall in mortality from all forms of infantile tubercle since 1886-90, as well as the constancy of the rates up to that period. The logarithmic section of the diagram, which records rate of change, as the upper section measures amount of change, in the death-rates, has been added in order to bring out the fact that although as this cause of death approaches extinction the amount of its reduction is diminishing, yet the rate of reduction is fully maintained. In order to admit of fuller comparison of the results of the two methods of statement the logarithmic curve for all forms of tubercle is shown also in the upper section of the diagram, its scale (50 per cent. greater than that of the lower section) being so chosen as to secure identity with the scale of actual rates at the two quinquennia, 1886-90 and 1916-20, bounding the period of decline recorded. In addition to these quinquennial rates those for the year 1921 are also shown in their appropriate position, so as to present the latest information. The effect of the two changes in classification upon the curve for meningeal tubercle will be seen in the form of sudden falls, not fully maintained subsequently. There is no evidence of any similar occurrence in the cases of the other two subdivisions.

Such a remarkable history as this at once suggests two questions (1) Does the fall since the closing years of the nineteenth century actually represent a reduction of the mortality due to tubercle by 79 per cent. ? and (2) What circumstances can account for the sudden change after 1886-90, whether this is due entirely to

DIAGRAM I.- INFANT MORTALITY FROM TUBERCULOSIS, DISTINGUISHING
VARIOUS SITES OF DISEASE 1861-5 TO 1916-20.



The Same Rates plotted on the Logarithmic Scale.



reduction of mortality from tubercle, or partly to change in certification? It is probable that an answer to the second question may throw much light upon the first.

In this connexion it may be of significance to remember that Koch's discovery of the tubercle bacillus was first published in 1882. As the significance of that epoch-making event gradually became realised it must have profoundly modified the conditions of certification. Thenceforth a certificate of tubercle committed the certifier to a definite opinion as to the cause of the illness—that it was due to the presence of the tubercle bacillus—in a way which cannot have applied before, when tubercle might mean one thing to one practitioner and another to another. As a generation of practitioners trained on the basis of the new knowledge has gradually replaced its predecessors the proportion of infantile deaths attributed to tubercle has rapidly and progressively declined, and the process is still going on. The fact that it did not seriously commence till after 1891–95 does not seem inconsistent with the cause suggested, for certification by the mass of practitioners can never be expected to keep pace with the latest discoveries of the laboratory. Bearing this in mind the date of the fall seems much what might have been expected from the suggested cause.

Of course this explanation of the course of events presumes that a large portion of the infantile mortality ascribed to tubercle before 1886 was not so caused, and that there was no important counterbalancing failure to ascribe deaths really due to tubercle to their true cause. This is not generally held to apply to tubercle in general, where it is thought that the balance of movement has been rather from bronchitis, etc., to phthisis than *vice versa*. But Table 6 shows that the declines of mortality from pulmonary and from non-pulmonary tubercle have followed totally different courses. That from pulmonary tubercle has been declining since the commencement of the official record in 1838, and especially, and at a remarkably constant rate, since 1866; while the rate from non-pulmonary changed but little from 1851 to 1891, but has since then fallen at an exceedingly rapid pace. These events may be explained by supposing that Koch's discovery had little effect upon the returns from pulmonary tubercle because in their case there was no balance of overstatement, but that the then existence of such a balance for non-pulmonary, infantile and other, explains the sudden subsequent fall in its case.

It does not follow, of course, that a great deal of the recorded fall may not be real. Probably it is, for the following reasons:

(1) Since the commencement of the century infant mortality in general has declined enormously. Here no question of certification arises, and it may be assumed that the causes which have led to the fall would apply to mortality from tubercle.

(2) Koch's discovery must have greatly lessened the exposure of infants to infection by leading to their protection from infective sputum. The increase in institutional treatment of phthisis will have operated in the same direction.

(3) So far as meningeal tubercle is concerned the problem arises—if deaths formerly so misdescribed are now allocated elsewhere where are they to be found? In view of the striking nature of the symptoms indicative of meningeal infection the transfer might be expected to have been from tuberculous to non-tuberculous meningitis. There is no evidence of this, mortality from "meningitis" having fallen even more rapidly than that from tubercle of the nervous system (Table 9).

The conclusion then appears to be that this amazing change is probably in part apparent only, as the result of former overstatement, but that it is certainly in large part real, and that Koch's discovery has determined the time of its occurrence by its influence upon both the fictitious and the real components of the decline.

The fact that tubercle as a whole and the meningeal and abdominal forms of the disease are shown by Table 9 to have caused a rather higher mortality in 1921 than in 1920 may or may not point to a definite slackening in the rate of fall. A similar set-back in 1917 was followed by resumption of the fall, and three years later the combined rate had been almost halved.

Table 9 shows that the fall in mortality from bronchitis and pneumonia mainly applies to the former. This fall has been exceptional, from 7·53 in 1920, and an average of over 8 in the nine preceding years, to 5·35 in 1921, but the rate from pneumonia is also the lowest in the table. The continuous reduction in mortality from syphilis after its sudden exacerbation in 1917 made further progress in 1921, but it remains higher than in any year of the present century previous to 1913. Mortality from injury at birth has increased steadily from 1·00 in 1918 to 1·39 in 1921. This is the highest rate for many years, if, indeed it has been equalled before. In 1905 the rate was 0·76. Increase from a low level in 1918, when so many obstetrical practitioners were engaged on military duty, is seen from Table XLIII to apply also to puerperal sepsis, but in this case a sudden drop in 1921 has almost restored the 1918 level.

Amongst the forms of return classed as developmental and wasting diseases, dependent on pre-natal rather than post-natal conditions (premature birth, congenital debility, etc., and malformations), the second alone shows significant reduction, but it is to be remembered that the others are probably increased by transfer from it. Premature birth, congenital malformations, icterus neonatorum, and atelectasis all however tend rather to decline than increase, though an increase in the rate ascribed to premature birth from 18·1 in 1920 (the lowest for many years) to 19·3 has caused a slight increase in the total mortality from this group of diseases.

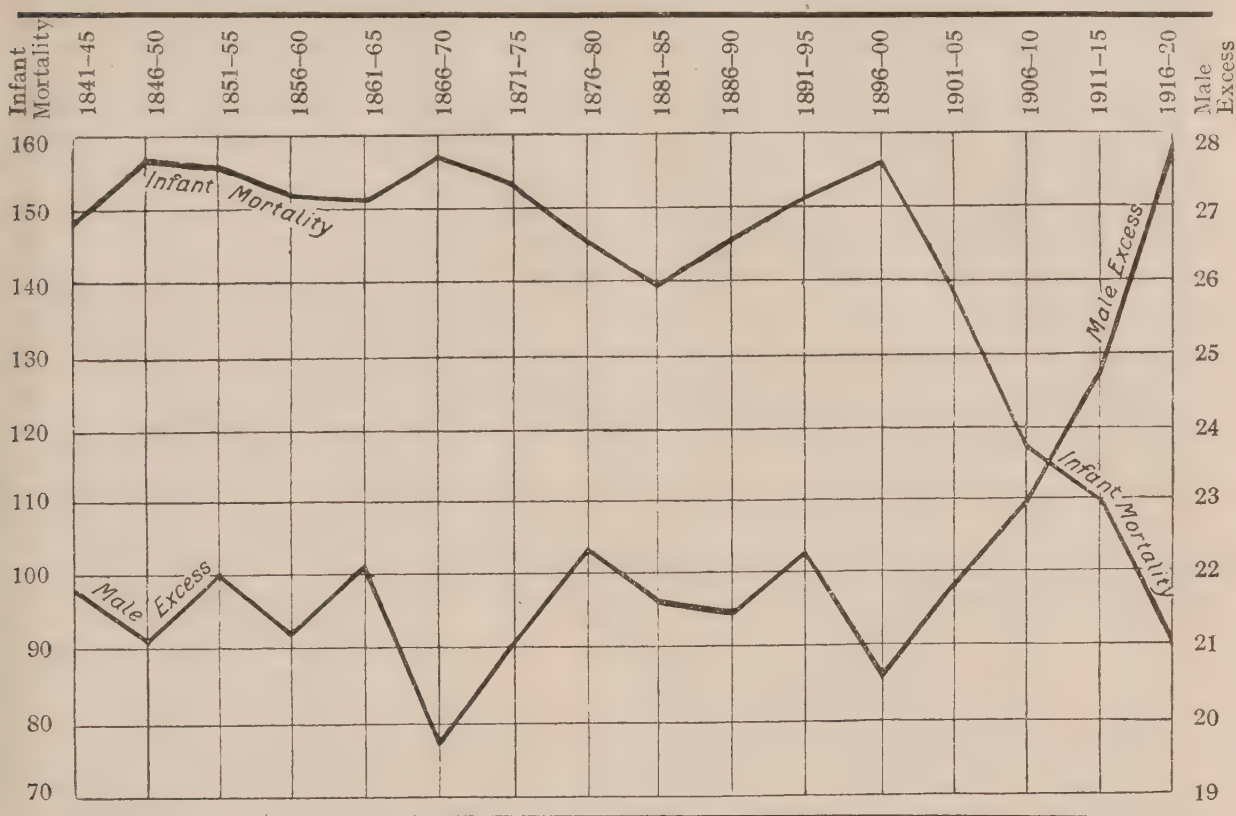
Table XII, which contrasts the mortality of male with that of female and of legitimate with that of illegitimate infants, shows that the mortality of males was 29 per cent. greater than that of females, and that all the principal causes of death except whooping cough display the same feature, the excess varying from 10 per cent. for measles to 43 for convulsions. The excess in the mortality of males was greatest at 0-6 months. All these features of the table—excess in male mortality of about 25 per cent. or a little more from all causes and from the principal groups of causes, excess of female mortality from whooping cough, and the decrease with advancing age of the excess in male mortality—reproduce themselves with remarkable constancy from year to year. The proportionate male excess was less in the case of illegitimate infants, as it has been in (at least) each of the past sixteen years. The excess in mortality of illegitimate children varied greatly for different causes of death. It was comparatively slight for whooping cough and congenital defects, but heavy for diarrhoea and for debility, etc. These are all very constant features of this table.

The great excess in the mortality of illegitimate infants from causes not distinguished in the table is largely due to syphilis, the rate attributed to which was 1·07 for the legitimate and 8·96 for the illegitimate (Table 10).

Increase in Excess Mortality of Male Infants.—While the excess in mortality of male infants varies little from year to year it has been slowly on the increase during the present century, the fall from the rates formerly prevalent having been somewhat greater for females. Compared with the mean rates for 1891-1900 that for males in 1921 has fallen by 45 and that for females by 48 per cent. (Table 3).

Diagram 2, which compares the history of infant mortality, and of the percentage excess of mortality of male over that of female infants, during the registration period, shows that in the last sixty years of the nineteenth century, while infant mortality was more or less constant, the excess for males was also constant at 21-22 per cent.; but that during the period of fall of infant mortality in the present century the male excess has gradually increased to a maximum of 27·8 in 1916-20 (30·4 in 1920 and 29·2 in 1921). Moreover, even during the era of stable rates in the nineteenth century the diagram affords indications in the minor fluctuations recorded of that negative correlation between the two variables plotted which is so plainly marked in the case of the major changes recorded for 1901-1920. The curve of infant mortality before 1901 shows, as plotted quinquennially, six summits or troughs in its course, which may be compared with the course of the male excess curve at the same periods. It will be seen that all three summits of the mortality curve and two of its troughs coincide in time with troughs or peaks of the curve of male excess.

Diagram 2.—Infant Mortality and Percentage Excess of Male Infant Mortality, in Quinquennia, 1841-45 to 1916-20.



The negative correlation suggested by the diagram has been calculated for the annual rates of the two periods, 1871-99 and 1900-21. During the first period, when infant mortality was fairly stable, the correlation coefficient $r = -\cdot4965 \pm \cdot0944$, while during the second period of large and opposed movement of the curves compared the correlation is naturally much higher— $r = -\cdot9016 \pm \cdot0269$.

An increase of the excess in mortality of males accompanying the decline in total infant mortality is a natural consequence of the greater excess in the mortality of males during the earlier months (Table XII) and of the greater fall in the mortality of the later months (Table III), since the weight of incidence on the male sex of any given reduction of mortality, equal for both sexes, falls with increasing age, and reduction in general has been greatest where this weight is least. But this factor goes but a small way to account for the change which has occurred, though from the fact that the ratio was stable until mortality began to fall and has since steadily increased it might appear to be the main cause of the change. If, however, we assume the mortality applying to the births of each sex in 1891-1900 to have been reduced as the total mortality for both sexes has been reduced since that date (by 32 per cent. at 0-3, 51 at 3-6, and 60 per cent. at 6-12 months) the mortality of males in 1921 becomes 91·3 and that of females 74·4, an excess for the former of 22·7 per cent., as against the 21·3 actually experienced in 1891-1900. So the difference between 22·7 and 29·2 per cent. excess is left to be accounted for by excess of decrease in female mortality.

Infant deaths may be considered in two groups, those which are inevitable (at least after birth) owing to the children being born without capacity for survival even under ideal conditions,

and those which are avoidable, death resulting from the effect of unfavourable environment upon an organism of, generally, defective resisting power. It is plain that as mortality falls the share of the first group in what remains must increase. The fact that recent improvement in environment has been accompanied by less fall in the mortality of males than of females suggests that a larger proportion of the deaths of males belongs to the first of the above two groups. If so, further improvement may be expected to result in further increase of the difference between the sexes. And the greater male excess in the earlier months of infancy points in the same direction, for the proportion of inevitable deaths must fall off rapidly as life advances.

This view receives a certain amount of support from the following comparison between countries of high and of low infant mortality in 1896-1905 (rates quoted from the "Annuaire Internationale de Statistique," Part II, 1917).

	Infant Mortality.		Male Excess.		Infant Mortality.		Male Excess.
	Males.	Females.			Males.	Females.	
			Per cent.				Per cent.
Prussia	211	179	18	Norway ..	97	79	23
Bavaria	269	227	19	Holland ..	132	109	21
Hungary	232	198	17	Sweden ..	105	86	22
Russia	275	242	14	Denmark ..	138	112	23

Foreign experience in the matter has also been tested by extracting from the same source the highest and lowest infant mortalities quoted (the decennium 1876-85 generally yielding the highest rate and one of the most recent years quoted, generally 1912-15, the lowest) for each country recording a considerable decline, and comparing the male excess, which is a universal rule for all the returns examined, in the two cases. The results are as follow :—

—	Infant Mortality.				Male excess when Infant Mortality.—	
	Highest.		Lowest.		Highest.	Lowest.
	Males.	Females.	Males.	Females.		
					Per cent.	Per cent.
Austria ..	271	230	197	165	18	19
Bavaria ..	315	269	194	160	17	21
Belgium ..	180	153	132	107	18	23
Denmark ..	149	125	105	81	19	30
Finland ..	175	149	113	95	17	19
France ..	183	153	115	94	20	22
Holland ..	205	172	94	74	19	27
Italy ..	212	192	135	120	10	13
Norway ..	108	91	70	58	19	21
Prussia ..	222	190	158	133	17	19
Saxony ..	304	259	172	140	17	23
Spain ..	204	179	146	128	14	14
Sweden ..	131	111	76	63	18	21
Switzerland ..	195	164	100	79	19	27
Wurtemberg ..	314	268	155	121	17	28

It will be seen that though Denmark, Holland, Switzerland, and Wurtemberg alone record an increase in male excess equal to that noted for this country there is no single instance of a movement in the opposite direction. Differences between countries are in part at least independent of the amount of their mortality, the ratios for Italy and Spain being throughout below those of other countries dealt with. For the twelve periods quoted for Italy the male excess varies from 9 to 12 per cent. and for the 13 periods for Spain the range is from 12 to 14 per cent.

Any attempt to distinguish by cause those deaths which are inevitable from the moment of birth fails because we cannot tell whether the death of an infant born with such a handicap as prematurity or congenital malformation would have occurred under ideal conditions of nurture. But a large proportion at least of the deaths from these two causes may be assumed to be inevitable, and it is the more remarkable to find excess mortality of males less for them as a rule than for all causes (Table XII). This observation seems out of harmony with the view that a larger proportion of males are essentially non-viable, and on further examination the facts prove difficult of explanation, not pointing clearly towards any definite conclusion on the matter. As, however, certain points of interest emerge they may be quoted. The period dealt with is 1911–21, for which the distinction between congenital heart disease, hydrocephalus, and other congenital malformations (excluding, for present purposes, phimosis) is available. The numbers of deaths are as follow :—

	Under 4 weeks.		4 weeks– 3 months.		3–6 months.		6–12 months.		Total under one year.	
	Males.	Fe- males.	Males.	Fe- males.	Males.	Fe- males.	Males.	Fe- males.	Males.	Fe- males.
Premature Birth..	89,469	68,893	7,538	6,447	909	843	191	196	98,107	76,379
Congenital Malformations	12,335	10,061	3,979	2,845	1,805	1,545	1,329	1,134	19,448	15,585
Congenital Hydro- cephalus	291	296	192	144	293	215	466	281	1,242	936
Congenital Heart Disease	5,527	3,877	1,251	884	552	486	420	399	7,750	5,646
Other Congenital Malformations ..	6,517	5,888	2,536	1,817	960	844	443	454	10,456	9,003

The infant mortalities resulting from these numbers yield the following percentages of excess for males :—

	Under 4 weeks.	4 weeks– 3 months.	3–6 months.	6–12 months.	Total under one year.
Premature Birth	24	12	3	–7	23
Congenital Malformations	17	34	12	12	19
Congenital Hydrocephalus	–6	27	31	59	27
Congenital Heart Disease	36	36	9	1	31
Other Congenital Malformations	6	34	9	–7	11

It will be noted that prematurity yields a greater male excess in the first than in the next succeeding months, as is to be expected on the assumptions that the proportion of inevitable deaths

Table XIII.—Comparison of Infant Mortality from the Principal Causes in Various Areas, 1921.

	Measles.	Whooping Cough.	Other Infectious Diseases.	Tuberculosis, all forms.	Diarrhoea and Enteritis.	Convulsions.	Bronchitis and Pneumonia.	Syphilis.	Suffocation, in bed, and not stated.	Injury at Birth.	Congenital Malformations.	Premature Birth.	Congenital Debility and Sclerema.	Other Causes.	All Causes.
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
	Differences from Rates for England and Wales per 100,000 Births.														
All Areas	North	+ 110	— 5	+ 18	+ 162	+ 159	+ 424	+ 36	+ 4	+ 17	+ 27	+ 226	+ 125	+ 134	+ 1470
	Midlands	— 17	— 8	—	— 191	— 114	— 200	— 8	+ 1	— 19	— 21	— 21	— 34	— 105	— 802
	South	— 17	+ 16	— 16	— 21	— 241	— 354	— 22	+ 3	+ 7	— 14	— 265	— 128	— 89	— 1217
	Wales	— 27	+ 1	— 26	+ 91	+ 510	— 4	— 60	— 30	— 25	+ 5	— 88	— 18	+ 95	+ 430
London	..	— 35	+ 53	— 9	+ 484	— 289	— 35	+ 1	+ 13	+ 8	—	— 316	— 32	— 24	— 186
County Boroughs	North	+ 87	+ 3	+ 33	+ 357	+ 137	+ 510	+ 91	+ 17	— 5	+ 19	+ 241	+ 83	+ 161	+ 1788
	Midlands	— 52	+ 2	+ 32	+ 198	— 135	+ 23	+ 32	+ 18	— 20	— 20	+ 123	+ 82	— 71	+ 219
	South	— 105	— 3	— 1	— 50	— 144	— 511	+ 21	+ 7	—	— 99	— 23	— 185	— 144	— 1233
	Wales	— 7	+ 13	— 34	+ 244	+ 343	— 87	+ 14	— 52	— 4	— 17	+ 153	— 340	+ 77	+ 248
England and Wales..	+ 30	+ 21	+ 2	+ 26	+ 264	+ 34	+ 235	+ 62	+ 14	— 9	— 5	+ 175	+ 39	+ 56	+ 944
Other Urban Districts	North	+ 156	— 16	+ 18	— 23	+ 160	+ 357	— 11	— 9	+ 44	+ 42	+ 197	+ 194	+ 110	+ 1239
	Midlands	— 75	— 8	— 2	— 224	— 94	— 204	— 11	— 2	— 29	— 31	— 4	— 91	— 146	— 951
	South	— 106	— 14	— 26	— 361	— 226	— 620	— 61	— 10	+ 12	— 11	— 212	— 247	— 91	— 2008
	Wales	— 18	— 3	— 40	+ 392	+ 489	+ 135	— 82	— 33	— 54	+ 28	— 188	+ 186	+ 120	+ 896
England and Wales..	— 14	+ 7	— 11	— 4	— 103	+ 42	— 39	— 28	— 9	—	+ 5	+ 8	+ 15	— 16	— 147

Rates per cent. of those for England and Wales.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Rural Districts															
North	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Midlands	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
South	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Wales	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
England and Wales..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	-18	+ 92	-10	-37	-168	+241	+244	-67	-15	+39	+22	+243	+121	+ 81	+ 768
	-32	- 67	-20	-40	-671	-115	-496	-56	-19	- 2	-10	-243	-107	- 94	-1972
	-41	-126	-26	-35	-894	-204	-739	-66	-11	+ 1	+ 8	-374	-185	-219	-2911
	+ 7	+ 59	—	+ 5	-564	+666	-198	-74	-11	+14	-22	- 76	-159	+ 68	- 285
	-26	- 27	-17	-33	-586	+ 40	-335	-63	-15	+11	—	-134	- 75	- 61	-1321
All Areas															
North	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Midlands	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
South	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Wales	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	153	141	84	112	112	131	129	125	107	112	107	112	117	114	118
	73	76	75	100	86	78	86	94	102	86	95	99	95	89	90
	73	72	150	90	98	53	76	85	105	105	96	86	83	91	85
	56	102	103	83	107	200	100	58	49	82	101	95	98	110	105
London	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	92	87	266	94	135	43	98	101	122	106	100	84	96	98	98
County Boroughs															
North	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Midlands	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
South	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Wales	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
England and Wales..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	187	132	109	121	126	127	135	164	129	96	105	112	111	116	122
	111	81	106	121	114	73	102	122	131	86	95	106	111	93	103
	106	61	91	99	96	72	65	115	112	100	75	99	75	85	85
	11	97	141	78	118	167	94	110	12	97	96	108	54	108	103
	148	108	106	117	119	107	116	143	124	94	99	109	105	106	111
Other Urban Districts															
North	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Midlands	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
South	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Wales	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
England and Wales..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	132	158	50	112	98	131	124	92	85	132	111	110	126	111	115
	52	72	75	99	84	82	86	92	97	79	92	100	88	85	89
	44	61	56	83	74	56	58	57	83	109	97	89	66	91	76
	42	93	91	74	128	196	109	43	44	61	107	90	125	112	111
	77	103	66	97	93	108	97	80	85	100	101	100	102	98	98
Rural Districts															
North	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Midlands	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
South	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Wales	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
England and Wales..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	71	134	69	76	88	147	117	53	75	128	106	113	116	108	109
	48	75	38	74	51	77	66	61	68	99	97	87	85	90	76
	34	53	19	77	35	60	50	54	81	101	102	81	75	78	65
	111	122	100	103	59	231	87	48	81	110	94	96	78	107	97
	58	90	47	79	58	108	77	56	75	108	100	93	90	94	84

decreases with advancing age and that it is higher for males than females ; but that the excess mortality of males from congenital malformations increases after the first month. The latter moreover vary between themselves, heart disease alone showing any notable male excess in the first month.

Of course it must not be assumed that the above excesses in mortality of males represent corresponding excesses in prematurity or defect. The greater resistance of females to mortality from all causes would presumably result in a lower death-rate from equal amounts of defect. After the first year of life this excess of female resistance is small, gradually disappearing as age advances, until at 10–15 a higher death-rate for females is the rule, so it is of interest to note that the excess mortality of males from congenital defects almost disappears after the first twelve months, except in the case of hydrocephalus. Excess mortality of males from hydrocephalus, negative at first, increases to 59 per cent. at 6–12 months. After the first year it reaches no less than 77 per cent. In the 20 years 1902–1921, for which the facts have been tabulated, there was no year without an excess of male deaths at ages over twelve months, its extent varying from 16 to 256 per cent., and averaging 74. This peculiarity of hydrocephalus, which does not appear to be noted in the text books, clearly distinguishes it from other malformations (assuming congenital hydrocephalus to result from error of development rather than foetal disease), of which it may be argued that since mortality is equal for the sexes at the ages at which their resisting powers are equal their incidence on both sexes is probably similar.

Distribution throughout the country of Mortality from various causes.—Table XIII, which is derived from Table 12, furnishes an analysis by cause of the differences in total mortality under one year of age shown in Table V. Table 12 having been first prepared for 1917, the results for four years only are available for comparison.

The greatest departures from the average mortality of the whole country in these tables are furnished by the county boroughs of the North, with excesses under nearly every cause distinguished, aggregating to 17·88 deaths per 1,000 births ; and by the rural and urban districts of the South and rural districts of the Midlands, which hold advantages under nearly every head aggregating to 29·11, 20·08, and 19·72 per 1,000 births respectively.

In each of these four cases the first places in order of numerical importance amongst the causes of death accounting for the differences are occupied by bronchitis and pneumonia and by diarrhoea. All of these statements apply in general also to 1917–20.

The details of this table are so similar to those of its four predecessors, as noted and commented upon in previous reports, that further reference to them here is unnecessary. One change has already been referred to. Overlying, till now in large excess for the South, and especially London, is no longer so. In 1917 the percentage excesses for this cause of death were 39 for the South

and 86 for London. In 1920 these figures had fallen to 29 and 45, and now they stand at 5 and 22. This mortality is now highest in the North, where in the four previous years it was below average.

Mortality at Ages over One Year.

In the absence of estimates of the ages of the population in the various sections of the country, the tables in the reports for the years 1911-14 showing mortality at different ages and standardized mortality at all ages by sex for the different classes of areas, urban and rural, cannot be included for 1921. Table XIV, however, gives the crude and standardized rates for sexes and persons for the whole country, as well as the mortality per million living at different ages, for 1920 and 1921, and, in order to provide means of comparison with the most recent pre-war experience, for 1911-14. Males aged 15-45 have had again to be dealt with as forming a single large age group in preparing the figures for 1920 and 1921.

Table XIV.—England and Wales : Mortality from all Causes per Million Population, 1911-1914, 1920, and 1921.

	Males.			Females.			Persons.		
	1911-14.	1920.	1921.	1911-14.	1920.	1921.	1911-14.	1920.	1921.
All Ages :									
Crude	14,870	13,413	12,957	13,041	11,456	11,328	13,926	12,388	12,106
Standardized { A	14,962	13,411	12,718	12,335	10,909	10,483	13,571	12,097	11,543
{ B	16,080	13,752	13,270	13,892	11,872	11,640	14,949	12,805	12,455
0-.. .. .	40,228	35,719	31,580	33,647	28,539	25,269	36,957	32,171	28,465
5-.. .. .	3,276	3,158	2,683	3,221	3,085	2,597	3,248	3,122	2,640
10-.. .. .	1,953	1,873	1,728	2,051	1,989	1,788	2,002	1,931	1,758
15-.. .. .	2,910	?	?	2,662	2,705	2,691	2,785	?	?
20-.. .. .	3,681	?	?	3,091	3,279	3,258	3,370	?	?
25-.. .. .	4,822	?	?	3,976	3,918	3,522	4,378	?	?
35-.. .. .	8,167	?	?	6,556	5,406	5,171	7,333	?	?
15-45	5,175	4,846	4,431	4,286	4,019	3,813	4,713	4,403	4,101
45-.. .. .	15,023	13,269	12,922	11,522	9,454	9,290	13,203	11,249	10,984
55-.. .. .	30,500	25,162	25,086	23,162	19,431	19,364	26,627	22,216	22,133
65-.. .. .	64,597	56,102	56,311	51,584	45,335	46,556	57,350	50,248	51,029
75-.. .. .	139,355	130,498	134,132	119,280	112,384	117,514	127,412	119,630	124,199
85 and upwards	271,185	235,351	254,245	244,078	246,117	268,909	253,709	242,183	263,508

A. English Standard (Population of England and Wales, 1901). B. International Standard. (See page 1.)

The mortality both of males and of females was lower in 1921 than in 1920 at every age dealt with up to 65, after which it was higher. The rates for males are lower at every age than those for the four years preceding the war, but those for females of 15-25, which were increased during the war, have not yet quite returned to their previous level. At 85 and upwards also the death-rate of females exceeded the pre-war level. Its unprecedented excess in 1920 and 1921 over that for males of the same ages has already been noted (page 3).

One of the most remarkable features in the table is the low level of mortality for males aged 15-45. Although these are presumably now (1921) of higher average age than before the war losses had been incurred, and although the health of many men

must have been impaired by injury and disease during the war, the death-rate at these ages was 14 per cent. lower than immediately before the war.

Table 3 shows that up to 65 years of age mortality was lower for each sex, not only than in 1920, but than in any previous year, except at 15–25 for females. At 65–75 mortality was lower for each sex than in any year before 1920, and at 75–85 and at 85 and upwards the rates for 1921 have been only occasionally lower in the past except in the case of women aged over 85, whose mortality was above the average of the thirty preceding years.

The improvement at age 0–5 shown in Table 3 is greatly increased when allowance is made for the changes caused by the war in the proportions at the five years of life making up the group (Table XV.). Before this is done 1921 holds an advantage over 1919 represented by a fall of only 3 per cent., whereas the more correct form of statement increases the fall to 22 per cent. The standardized rates for each sex are less than half those recorded in Table 3 for any quinquennium during the nineteenth century, and in the case of females less than half the rate for any single year in that century. The reason why standardization decreases the mortality of 1920 and 1921 while increasing that of the four preceding years is that the low birth-rates of those four years are represented in the 1921 population by comparatively small numbers aged 2–5, when mortality is low, while the higher birth-rates of 1920 and 1921 are represented by large numbers at 0–2, when mortality is high. Allowance for this disadvantage of the later populations reduces their mortality as shown.

Table XV.—England and Wales, 1916–1921 : Comparison of Crude and Standardized Death-Rates at Age 0–5.

	Males.		Females.		Both Sexes.	
	Crude.	Stand-ardized.	Crude.	Stand-ardized.	Crude.	Stand-ardized.
1916	32.5	34.0	26.5	27.9	29.5	31.0
1917	31.7	34.1	26.2	28.3	29.0	31.2
1918	38.5	42.5	33.8	37.1	36.2	39.8
1919	32.4	36.4	26.1	29.3	29.3	32.9
1920	35.7	31.7	28.5	25.9	32.2	28.8
1921	31.6	28.4	25.3	22.9	28.5	25.7

Mortality at 1–5.—Table XVI shows that mortality at these ages continues to fall with great rapidity. The standardized rate for males, 9.75 per thousand living, is 25 per cent. below that of the previous year and 38 per cent. below that of 1911–14. For females the corresponding reductions are 26 and 40 per cent.

Comparison of the declines from the 1911–14 standard with the corresponding ratios in the Report for 1920 shows that the salient feature of the 1921 experience is the manner in which the falls for all the years of age 1–5, which in 1920 were less than that for the first year, have now overtaken and passed this for each sex. For the second year mortality is now little more than half that of 1911–14. The second year also records the greatest fall, 30 per cent., below the level of 1920, but here the fifth year presses it close, with a fall of 29 per cent., which is the more remarkable seeing that up to 1920 the fall here had only been 5 per cent.

Owing to the difficulty of estimating local populations at ages until the tabulation of ages at the recent census is completed, sectional death-rates have been taken out only for the second year of life, for which estimation of the numbers living has been made by deduction of deaths from births, without allowance for migration. The increasing importance of this factor with each added year of life forms the reason why the estimate has not been made for higher ages. The mortalities, and their ratios per cent. of those of 1920, are as follows :—

Table XVII.—Mortality at 1–2 years, 1921.

	Deaths per 1,000 Living.					Ratio per cent. of Rates in 1920.				
	North.	Midlands.	South.	Wales.	England and Wales.	North.	Midlands.	South.	Wales.	England and Wales.
London	—	—	18·6	—	18·6	—	—	60	—	60
County Boroughs	30·4	18·4	11·0	17·0	24·0	75	61	57	56	69
Other Urban Districts	23·7	13·5	9·6	18·0	16·7	78	70	72	57	71
Rural Districts	19·5	10·4	7·8	13·3	12·3	81	74	80	69	76
All Areas	26·7	14·5	13·7	16·5	18·6	77	67	65	60	70

It will be seen that the decrease is least in the North, where the opportunity for improvement, represented by a comparatively high death-rate, is greatest. In London and in Wales as a whole it amounts to no less than 40 per cent. in the one year. It is not so great in the rural districts as in the towns, probably because their rates were already so low as to afford less scope for improvement. In the rural districts of the South, with a mortality of only 7·8 (as compared with 42·4 for England and Wales in 1891–1900 and 67·8 in 1848–72) the irreducible minimum seems to be coming within sight, but the contrast between this rate and that of 30·4 for the Northern county boroughs shows that in the country as a whole these deaths must still be largely preventable. It may be noted that whereas in all parts of England mortality increases with urbanization, in Wales the record of the county boroughs is, as in many other cases, better than that of the smaller towns.

The extent to which the mortality of the second year is influenced by environment is shown by the following comparison,

showing the percentage ratio of the higher to the lower rate in each case dealt with :—

—		North to South.	County Boroughs to Rural Districts.	All Urban Areas to Rural Districts.
12–15 months	..	186	195	161
15–18	..	211	203	165
18–21	..	197	188	162
21–24	..	186	189	168
Second Year	..	195	195	163

The differences here shown are greatly in excess of those set forth in Tables V and VI for the first year. Susceptibility to environment appears to reach a maximum at this age. It may be noted that whereas the influence of geographical position and of urbanization as stated above were equal in 1921 that of the former was greater in 1919 and of the latter in 1920.

In the face of such a sudden and considerable reduction of mortality at ages 1–5 it is of interest to inquire to which causes the change is chiefly attributable. This may be seen from Table XVIII, but it is to be borne in mind that the crude rates there quoted are shown by Table XVI to understate the fall, particularly from 1920.

Table XVIII.—Mortality per Million living at ages 1–5 years in 1911–14, 1920, and 1921—Both Sexes.

Cause of Death.	Death-rate.			Cause of Death.	Death-rate.		
	1911– 14.	1920.	1921.		1911– 14.	1920.	1921.
7. Measles	2,643	1,965	592	98.2. Laryngitis	151	137	90
8. Scarlet Fever	369	243	195	99. Bronchitis	862	780	611
9. Whooping Cough	1,202	850	838	100. Broncho-pneumonia ..	2,146	2,196	2,053
10. Diphtheria	772	979	764	101. Pneumonia (Lobar and not otherwise defined).	856	651	580
11. Influenza	59	226	185	Other respiratory diseases	138	121	92
31. Tuberculosis of Respira- tory System.	235	169	141	112 : 1 Inflammation of the Stomach.	93	81	72
32. Tuberculosis of Nervous System.	697	492	471	113 & 114. Diarrhoea and Enteritis.	1,621	522	972
33. Tuberculosis of Intestines and Peritoneum.	387	218	222	128. Acute Nephritis ..	88	70	52
34–37. Other tuberculous dis- eases.	284	186	170	159. Congenital Malforma- tions.	84	74	87
56. Rickets	170	115	107	179. Burns	356	320	273
71. Meningitis	446	249	283	Other Violence	271	227	235
80. Convulsions	455	286	315	Other Causes	1,060	885	856
				All Causes	15,445	12,042	10, 56

A large portion—as compared with 1920 by far the greater portion—of the total decline is seen to be due to the unprecedentedly low mortality from measles in 1921. The movement under

this heading compares as follows with those under the other principal causes concerned :—

<i>Decline from 1911–14.</i>			<i>Decline from 1920.</i>		
Measles	..	39·5	Measles	..	76·9
Whooping Cough	..	7·0	Respiratory Diseases..		25·7
Tuberculosis	..	11·5	Diarrhoea	..	+25·2
Respiratory Diseases	..	14·0	Other Causes	..	22·6
Diarrhoea	..	12·5			
Other Causes	..	15·5			
<hr/>			<hr/>		
All causes	..	100·0	All causes	..	100·0
<hr/>			<hr/>		

The improvement on 1920 would have been much greater than it was but for a considerable rise in diarrhoeal mortality, due to the exceptional heat of the summer. Further reduction may be looked for under this head, but on the other hand the mortality from measles must be expected to exceed the altogether exceptional rate of 1921 in most years of at least the immediate future.

A very satisfactory feature of Table XVIII is the reduction of the large mortality from burns which is a constant feature of the returns at these ages. There is also an appreciable reduction in mortality from other forms of violence as compared with 1911–14. As the family decreases in size the individuals comprising it appear to be taken better care of.

Mortality of the Aged.—It has already been noted that though higher than in 1920 this was lower, as stated in Table 3, than in nearly all earlier years except in the case of females over 85 years of age. The growing importance of this portion of our total mortality may be gathered from the fact that whereas since 1911 the total population has increased by 5 per cent., that at ages over 70, as estimated in Table L, shows an increase of 18 per cent.

The principal causes to which mortality at ages over 70 is attributed are set out in Table XIX in comparison with corresponding figures for other recent years. In making these comparisons the declining vogue of “ old age ” as a form of death return causes a difficulty. The proportion of deaths so certified at over 70 years of age has fallen, mainly during the earlier part of the decennium, from 28·9 per cent. in 1911 to 20·6, the lowest figure yet reached, in 1921, with, of course, a corresponding increase in the proportions and death-rates assignable to defined causes. Notwithstanding this the rates shown in the table for 1921 are below the averages of both the preceding quinquennia for all causes except cancer and diseases of the heart and blood vessels. The increase from vascular diseases is due entirely to increase in the number of deaths ascribed to arterio-sclerosis, mortality so returned having grown from 3·5 in 1911–15 to 6·4 in 1921, whereas that from other forms of

vascular disease, mainly cerebral hæmorrhage, has fallen from 11·4 to 10·6 per thousand in the same period. In part this represents a mere transfer of mortality from cerebral hæmorrhage to the arterial disease occasioning it—a change which shows the need for a comprehensive group of vascular diseases including cerebral hæmorrhage as well as those so classified in the International List—but in part also it probably represents the transfer to arteriosclerosis of some of the mortality formerly ascribed to old age. It is very doubtful therefore how far the increase shown under this head is a real one.

Table XIX.—England and Wales : Mortality over 70 Years of Age in 1911–15, 1916–20, 1920, and 1921, from the Chief Causes of Death.

	Deaths from each Cause per 1,000 Total Deaths.				Mortality per 1,000 Living.			
	1911- 15.	1916- 20.	1920.	1921.	1911- 15.	1916- 20.	1920.	1921.
Males.								
Influenza (11)	15	25	13	14	1·8	2·9	1·3	1·5
Cancer (43–49)	79	84	96	100	9·5	9·7	9·8	10·5
Heart Diseases (87–90)	143	154	157	156	17·1	17·9	15·8	16·3
Disease of Blood Vessels, including Cerebral Hæmorrhage (74, 91–93)	139	154	171	178	16·6	17·9	17·3	18·6
Bronchitis (99)	136	139	132	125	16·2	16·2	13·4	13·1
Pneumonia (100, 101)	34	35	33	34	4·1	4·0	3·4	3·5
Chronic Nephritis (129)	30	28	28	27	3·6	3·2	2·9	2·8
Old Age (164)	237	208	197	190	28·3	24·2	19·9	19·9
Other Causes	187	173	173	176	22·3	20·3	17·3	18·4
All Causes	1,000	1,000	1,000	1,000	119·5	116·3	101·1	104·6
Females								
Influenza (11)	19	28	14	18	1·9	2·9	1·3	1·8
Cancer (43–49)	85	90	100	101	8·9	9·0	9·2	9·7
Heart Diseases (87–90)	146	161	173	176	15·3	16·2	15·9	17·0
Disease of Blood Vessels, including Cerebral Hæmorrhage (74, 91–93)	132	146	160	163	13·8	14·7	14·7	15·8
Bronchitis (99)	147	151	139	132	15·4	15·3	12·8	12·8
Pneumonia (100, 101)	33	32	30	33	3·4	3·2	2·7	3·2
Chronic Nephritis (129)	22	19	20	20	2·3	1·9	1·8	2·0
Old Age (164)	263	234	224	219	27·5	23·6	20·6	21·1
Other Causes	153	139	140	138	16·0	13·9	12·9	13·3
All Causes	1,000	1,000	1,000	1,000	104·5	100·7	91·9	96·7
Persons.								
Influenza (11)	17	27	13	17	1·9	2·9	1·3	1·7
Cancer (43–49)	82	87	99	100	9·1	9·3	9·4	10·0
Heart Diseases (87–90)	145	158	166	167	16·0	16·9	15·9	16·7
Disease of Blood Vessels, including Cerebral Hæmorrhage (74, 91–93)	135	149	165	170	14·9	16·0	15·8	17·0
Bronchitis (99)	142	146	136	129	15·7	15·6	13·0	12·9
Pneumonia (100, 101)	33	33	31	33	3·7	3·5	3·0	3·3
Chronic Nephritis (129)	26	23	23	23	2·8	2·5	2·2	2·3
Old Age (164)	251	222	212	206	27·8	23·8	20·3	20·6
Other Causes	169	155	155	155	18·8	16·7	14·9	15·5
All Causes	1,000	1,000	1,000	1,000	110·7	107·2	95·8	100·0

The increase in mortality from heart disease since 1911–15 is peculiar in being compounded of a substantial increase for females and a smaller decrease for males. That from cancer applies to each sex and is more considerable than in any previous year covered by the table. On the other hand the mortality ascribed to bronchitis and pneumonia is well below the average for both the preceding quinquennia, though a trifle higher than in 1920, and it is to this decline, in addition to the reduction under the heading of “old age” that the comparatively low total rates of the last two years are mainly due.

Centenarians.—Among the deaths registered during the year there were 59 of reputed centenarians, 21 of whom were males and 38 females. In the preceding three years the numbers were 60, 76, and 55 respectively. Particulars of the ages returned and of the classes of area concerned are given in Table XX.

Table XX.—England and Wales, 1921 : Deaths of Centenarians.

	Males.							Females.						
	Age.							Age.						
	100 and over	100	101.	102.	103.	104.	105.	100 and over	100.	101.	102.	103.	104.	105.
London	3	2	—	—	—	1	—	8	4	1	2	1	—	—
County Boroughs	4	1	—	2	1	—	—	8	5	2	—	1	—	—
Other Urban Districts	5	1	2	—	1	—	1	9	2	3	1	—	2	1
Rural Districts	9	5	4	—	—	—	—	13	5	2	3	1	1	1
All areas	21	9	6	2	2	1	1	38	16	8	6	3	3	2

CAUSES OF DEATH.

The causes of death of males and females at 18 groups of ages are stated in Table 17 for the whole country, for London, for county boroughs in the aggregate, for other urban districts in the aggregate, and for rural districts in the aggregate; and in Table 17A further detail of age is shown for all causes of significance at ages 0–5. In Table 18 deaths from each cause distinguished are tabulated by month of occurrence and by sex, but not by age. This table differs from all others in referring to date of occurrence and not of registration. So far as they relate to the whole country these tables include all deaths, but deaths of non-civilians are excluded from all tables relating to portions of the country. The causes and ages of the latter are stated in Table 19 for the country as a whole. Table 17 includes the full International List of causes of death, as revised in 1920. Certain of the numbered items in it are sub-divided, and where this occurs the letters (*a*), (*b*), etc., indicate sub-divisions in international use, and numbers (1), (2), etc., sub-divisions made without international agreement. All other abstracts of the causes of death are arranged in the form of the short list of causes adopted by the Registrar General in consultation with the Ministry of Health for use during 1921–30. The relation of this list to the detailed and

condensed International Lists as revised by the International Commission which met for the purpose at Paris, in 1920, is as follows :—

Short List of Registrar General.							Corresponding Number.	
							Detailed Inter- national List.	Abridged Inter- national List.
1	Enteric fever	..	..	..	..	1	1
2	Small-pox	..	..	..	..	6	4
3	Measles	..	..	..	..	7	5
4	Scarlet fever	..	..	..	..	8	6
5	Whooping cough	..	..	..	..	9	7
6	Diphtheria	..	..	..	..	10	8
7	Influenza	..	..	..	..	11	9
8	Encephalitis lethargica	..	..	..	..	23	12 pt.
9	Meningococcal meningitis	..	..	..	..	24	12 pt.
10	Tuberculosis of respiratory system	..	..	..	..	31	13
11	Other tuberculous diseases	..	..	..	..	32-37	14 & 15
12	Cancer, malignant disease	..	..	..	..	43-49	16
13	Rheumatic fever	..	..	..	..	51	37 pt.
14	Diabetes	..	..	..	..	57	37 pt.
15	Cerebral hæmorrhage, &c...	..	..	..	..	74 & 75a	{ 18 pt. 37 pt.
16	Heart disease	..	..	..	..	87-90	19
17	Arterio-sclerosis	..	..	..	..	91b	37 pt.
18	Bronchitis	..	..	..	..	99	20 & 21
19	Pneumonia (all forms)	..	..	..	..	100 & 101	22 & 23pt
20	Other respiratory diseases	..	..	..	..	{ 97, 98 & 102-107 }	23 pt.
21	Ulcer of stomach or duodenum	..	..	..	..	111	24 pt.
22	Diarrhoea, &c. (under 2 years)	..	..	..	..	113	25
23	Appendicitis and typhlitis	..	..	..	..	117	26
24	Cirrhosis of liver	..	..	..	..	122	28
25	Acute and chronic nephritis	..	..	..	..	128 & 129	29
26	Puerperal sepsis	..	..	..	..	146	31
27	Other accidents and diseases of pregnancy and parturition	..	..	..	..	{ 143-145 & 147-150 }	32
28	Congenital debility and malformation, premature birth	..	..	..	..	{ 159-161 }	33
29	Suicide	..	..	..	..	165-174	36
30	Other deaths from violence	..	..	..	..	175-203	35
31	Other defined diseases	{ 2-5, 12-22, 25-30, 38-42, 50, 52-56, 58-73, 75b-86, 91a, 91c-96, 108-110, 112, 114-116, 118-121, 123-127, 130-142, 151-158, 162-164 }				{ 2, 3, 10, 11, 12 pt., 17, 18 pt., 24 pt. 27, 30, 34, & 37 pt.		
32	Causes ill-defined or unknown	..	..	..	..	204 & 205	38

The contents of every heading in both the short and the detailed list now in use and their relation to the items in the list previously used, will be defined in the Registrar General's "Manual of the International List of Causes of Death" (1920 Revision), which should be consulted in all cases where it is desired to ascertain the precise significance of any heading in the lists; but publication of this has unfortunately been delayed by the fact that the International List in its complete form has not yet been issued.

In Table 20 deaths of civilians are shown for different classes of area in various sections of the country, for urban and rural portions of administrative counties, and for county and metropolitan boroughs, arranged by sex, age, and the short list of causes as above. For other administrative areas of over 10,000 population in 1921 the deaths are shown in Table 21, arranged by sex and short list of causes, but without distinction of age.

In addition to the above tables, which relate exclusively to the year 1921, Table 4 contains a statement of the number of deaths registered in each year 1911–21 from each cause distinguished in Table 17, so far as available, with distinction of sex but not of age; while Table 5 states the corresponding crude death-rates per million living for persons, males, and females, so far as these can be regarded as of any significance. Similar Tables (Nos. 8 and 9) state the mortality during the same eleven years of infants under one year of age from the causes of chief importance at that age, but without distinction of sex.

1. Enteric Fever.—The deaths classified to this heading during 1921 numbered 613, of which 6 occurred amongst the non-civilian population. Of these, 18, or 3 per cent., were returned as paratyphoid, as against 6, or only 0·25 per cent, in 1911, the only previous year for which the information has been published.

The resultant mortality, 16 per million living, is the lowest ever recorded in this country except in 1920 (14). The following table shows that the reduction is no longer due, as it was to some extent during the war, to decrease by foreign service of the most susceptible elements of the population. For each sex the crude rate in 1921, as in 1920, remains unaltered by standardization, as was the case also before the war; though during its progress the reduction in the number of young adult civilian males contributed to the fall in the crude rate, as shown by the excess in the standardized rates for males for those years.

Table XXI.—Enteric Fever : Mortality per Million Living, 1901–21.

	Crude Rates.			Standardized Rates.		
	Males.	Females.	Persons.	Males.	Females.	Persons.
1901–10 (Total Population)	109	74	91	109	74	91
1911–14 „ „	60	39	49	60	39	49
1915 (Civilian Population)	43	29	35	46	29	38
1916 „ „	37	25	30	41	25	32
1917 „ „	33	24	28	44	23	33
1918 „ „	29	25	26	35	25	30
1919 (Total Population)	18	13	16	19	13	16
1920 „ „	16	12	14	16	12	14
1921 „ „	17	15	16	17	15	16

The death rate of 1921 is only about one-quarter of what it was even ten years earlier. Its distribution throughout the country is outlined in Table XXII.

Table XXII.—Enteric Fever, 1921 : Mortality (Unstandardized) per Million Civilian Population.

Class of Area.	North.	Midlands.	South.	Wales.	England and Wales.
London	—	—	13	—	13
County Boroughs	17	11	8	19	14
Other Urban Districts ..	34	11	14	16	20
Rural Districts	21	13	12	13	14
All Areas	23	11	13	15	16

As in the six preceding years, mortality was at its maximum in the smaller towns ; and as in each year but one (1917) from 1911 onwards, it was lower in London than in any other class of area. Of the four sections of the country distinguished, the Midlands, as also in each of the nine preceding years, returned the lowest rate. That for the North was much the highest, but the rates for all four sections of the country show a slight increase on those of 1920. The North has returned the highest rate in each year 1911–21 except 1919, when that for Wales was slightly higher.

Table 23 shows that the rate of prevalence recorded in Table XXIII is the lowest for any year from 1911 onwards, with the exception of 1920. Ten years earlier this rate was almost four times as high.

Table XXIII shows that the comparatively high mortality of the North was due in part to higher fatality of the cases notified, but mainly to excess in the number of cases. This experience reverses that of 1920, when a very similar northern excess in mortality was due mainly to greater fatality, and only in minor degree to greater prevalence. It will be seen that fatality was least in the smaller towns, where, owing to great excess in prevalence, mortality was greatest. This applies especially to the North, where the returns are coloured by the outbreak in Bolton-upon-Deane.

Table XXIII.—Enteric Fever, 1921 : Prevalence and Fatality.*

Class of Area.	Cases per 1,000,000 Population.					Deaths per 1,000 Cases.				
	North.	Midlands.	South.	Wales.	England and Wales.	North.	Midlands.	South.	Wales.	England and Wales.
London	—	—	76	—	76	—	—	175	—	175
County Boroughs	80	73	98	84	80	217	151	83	222	181
Other Urban Districts ..	231	71	104	119	136	146	153	134	131	144
Rural Districts	111	90	89	92	94	188	140	139	143	153
All Areas	135	77	88	104	102	173	148	143	149	158

* Excluding non-civilian cases and deaths.

The fatality rates returned for this and other notifiable diseases from 1911 onwards are compared in Table XXIV. The rate for 1921, 158 deaths per 1,000 cases notified, is seen to be the lowest of the series, the maximum having been reached at the close of the war, in 1918. These observations apply also to scarlet fever and diphtheria. If the 1918 maximum was due to lack of medical attention, including nursing, the rates suggest that the ground lost has been more than recovered, but of course it is impossible to assume either uniform severity of disease or uniformity of practice in notification.

Table XXIV.—England and Wales : Fatality of certain Infectious Diseases (Deaths per 1,000 Notified Cases) in each year 1911–21.*

Year.	1. Enteric Fever.	6. Small-pox.	8. Scarlet Fever.	10. Diphtheria.	21. Erysipelas.	22. Poliomyelitis.	24. Meningococcal Meningitis.
1911	174	78	18·1	103	39	?	?
1912	191	73	18·6	96	39	?	?
1913	182	87	16·1	88	35	283	1,089
1914	194	62	17·2	99	42	348	1,257
1915	197	144	18·2	109	45	333	623
1916	188	107	17·8	103	40	270	704
1917	203	429	15·0	103	42	468	692
1918	206	32	20·0	109	46	1,013	767
1919	160	82	14·7	90	41	294	732
1920	171	114	12·0	81	52	404	911
1921	158	16	9·5	72	55	314	1,007

* The rates in this table are given with reserve, being in some respects unsatisfactory. For some years (1911–14), cases of disease in non-civilians have been included, and for some (1915–21), excluded from the returns of notifications, but this difficulty has been largely overcome by similar treatment of deaths.

The numbers of small-pox cases in some years are too small to yield significant rates, but their basis of fact can be inferred from Table 4, and the rates quoted serve to bring out the extremely mild type of disease prevalent in 1921, when 315 cases were notified. The rates for poliomyelitis include polioencephalitis, which was not distinguished in the notifications returns until 1919. The extraordinary rise in 1918 is partly ascribable to certification of a number of deaths from the then “new disease,” encephalitis lethargica, as polioencephalitis, but mainly to a reduction in notifications unaccompanied by significant change in the number of deaths (*see* Report for 1918). The rates from this disease will be found to differ from some of those published in the Annual Reports of the Chief Medical Officer of the Ministry of Health, partly because polioencephalitis is included throughout and partly because special inquiries made by the Ministry in certain years have led to revision of the returns for those years, which is not embodied in Table XXIV. The cases there referred to are similar for each year dealt with, being in all cases derived from the published notification returns. The last source of discrepancy applies also to meningococcal meningitis, and in this case there is a possibility that some cases of posterior basal meningitis may not have been notified as cerebro-spinal fever though all such deaths are included in the table.

Table 7 shows that the highest mortalities returned by administrative counties with a population exceeding 100,000 were 57 per million in the West Riding, 39 in Flint, and 35 in Northumberland. The first of these was largely due to a serious outbreak (but of low case mortality) in and around the urban district of Bolton-upon-Deane, particulars of which have been published by the Ministry of Health. The highest rates for county boroughs were returned by Wigan (88), West Hartlepool (87), Tynemouth (78), and Salford (75), the corresponding deaths numbering 8, 6, 5, and 18 respectively. Of these Tynemouth and Salford were amongst the four highest in 1920 also.

5. **Malaria.**—The number of deaths allocated to this cause has largely increased during the last few years, and in 1921 amounted to 143 as against averages of 60 in 1911–16 and 210 in 1917–20.

The numbers are now falling again, and the fact that only four of the decedents were females shows the extent to which this mortality is confined to imported disease.

6. Small-pox.—The deaths certified as due to this cause in 1921 numbered five only, although no less than 315 cases were notified, these figures yielding the exceptionally low fatality rate of 16 per thousand (Table XXIV). Particulars, including vaccinal condition, are given in the report of the Chief Medical Officer of the Ministry of Health.

7. Measles.—The deaths registered from this cause numbered 2,241 against 7,190 in 1920, and 3,534 in 1919. They correspond to a death-rate of 59 per million total population at all ages. At ages under 15 years, for which comparison is unaffected by the calculation of the rate upon civilian population only during the war, the mortality was 206 per million living at those ages. This is less than half the rate recorded for any year prior to 1919 (Table 6), and one-fifth to one-sixth of the mortality prevailing during the latter half of last century. The facts that this is the second alternative year of mortality on an unprecedentedly low scale, and that the rate for the intervening year was lower than any recorded prior to 1916, give grounds for hope that a new era in the history of this disease may have opened. The distribution of this mortality throughout the country cannot be satisfactorily studied in the absence of estimates of the ages of the people in different localities, for, stated in terms of population at all ages, a low rate may mean either comparative freedom from fatal disease or a small proportion of children in the population, and *vice versa*; but as the calculation cannot be made on the basis of the child population until the tabulation of ages recorded at the recent census is completed it is given in Table XXV in the form of crude death-rates at all ages, and this course has been followed in other similar cases.

Table XXV.—Measles, 1921 : Civilian Mortality per Million Living at all Ages.

	North.	Midlands.	South.	Wales.	England and Wales.
London	—	—	54	—	54
County Boroughs ..	132	67	35	4	95
Other Urban Districts	83	31	16	19	44
Rural Districts ..	42	27	21	30	29
All Areas	103	42	36	19	59

As in each year since 1911, mortality was higher in the North than elsewhere in England, but for 1921 the northern rate is more than double that of any other section of the country. In 1911 the

South, and in 1912 and 1920 Wales, returned the highest rate. As in each of the last eleven years (for which alone the comparison can be made) and probably many more, it was highest in the great towns. Table 7 shows that the three administrative counties—Durham (197), Northumberland (186), and the North Riding (133)—returning the highest mortalities are in the North, and that the same statement applies to no less than 11 out of 12 county boroughs, Sunderland (540), West Bromwich (425), Liverpool (400), and Barrow in Furness (386), coming first. But it is interesting to note from Table 6 that even the highest rate here quoted has been exceeded more than once within the last 40 years by the mortality of the whole country.

8. Scarlet Fever.—The deaths allocated to this disease during 1921 numbered 1,305. They correspond to a rate of 34 per million total population at all ages, and of 103 per million at ages under 15 years.

Table 6 shows that for six years in succession each of these rates has been much lower than any recorded before 1916, the mortality being now trifling compared with that prevalent a generation ago. The increase from the minimum rate reached in 1917 is due entirely to greater prevalence, notified cases increasing from 48,817 in that year to 137,073, the largest number since 1914, in 1921; for Table XXIV shows that the fatality in 1921, 9·5 deaths per 1,000 notified cases, was by far the lowest on record. For a number of years now the type of this disease met with has been exceedingly mild, but 1921 very definitely marks a further stage in this development.

Table XXVI.—Scarlet Fever, 1921 : Civilian Mortality per Million Living at all Ages.

	North.	Midlands.	South.	Wales.	England and Wales.
London	—	—	65	—	65
County Boroughs ..	41	29	20	33	35
Other Urban Districts	34	27	20	58	31
Rural Districts ..	35	20	9	32	22
All Areas	38	26	37	45	35

Table XXVI shows that the mortality was highest in London and lowest in the South apart from London, declining regularly from North to South in each class of area as well as, generally, from great towns to rural districts. Table XXVII shows that the London excess was due entirely to greater prevalence there, for case mortality in London did not exceed the average, though

considerably higher than in the remainder of the South, where it was at a minimum. Prevalence was between three and four times as great in London as in the rural districts, but fatality was rather less.

Table XXVII.—Scarlet Fever, 1921 : Prevalence and Fatality.*

	Cases per 10,000 Population.					Deaths per 1,000 Cases.				
	North.	Midlands.	South.	Wales.	England and Wales.	North.	Midlands.	South.	Wales.	England and Wales.
London	—	—	73	—	73	—	—	9	—	9
County Boroughs	36	33	34	40	35	11	9	6	8	10
Other Urban Districts	28	38	31	48	34	12	7	7	12	9
Rural Districts	26	20	16	23	21	14	10	6	14	11
All Areas	32	31	47	38	36	12	8	8	12	9

* Excluding non-civilian cases and deaths.

Table 7 shows that amongst the administrative counties the London mortality was exceeded only by those of Glamorgan (86) and the Isle of Ely (68). The highest rates returned by county boroughs were those of Bootle (103), Dudley (88) and Wigan (88). The first mentioned town has returned a specially high mortality for several years past, coming second in the county borough list in 1918, third in 1920, and fourth in 1917. The neighbouring towns of Liverpool and St. Helens have also yielded consistently high rates from 1914 or 1915 onwards, that of St. Helens being highest amongst the county boroughs in 1916 and 1917, but their rates in 1921 were only in moderate excess of average. Birkenhead also formed part of the group in 1918 and 1919, when it came first and second amongst the county boroughs, but before and since those years its rates have been low.

9. Whooping Cough.—The deaths allocated to this heading numbered 4,576, 2,046 of males and 2,530 of females. The excess of females is shown by Table 4 to be a constant feature of this disease. Increase of the excess in mortality of females with increasing age is another constant feature. For 1921 the percentage excesses for females were 14 in the first twelve months (infant mortality) and 37, 61, 49, and 65 per cent. in the second, third, fourth and fifth years respectively. After the third year the deaths are too few to exclude chance variations in the gradation, but for the decennia 1901–10 and 1911–20 increase of female excess with age is uninterrupted. The mortality was 121 per million total population at all ages, and 422 at ages under 15 years. These rates, though considerably above the phenomenally low level attained in 1919, are shown by Table 6 to be much below any returned prior to 1917.

Table XXVIII.—Whooping Cough, 1921 : Civilian Mortality per Million Living at all Ages.

	North.	Midlands.	South.	Wales.	England and Wales.
London	—	—	121	—	121
County Boroughs ..	189	102	68	141	146
Other Urban Districts	190	75	62	128	116
Rural Districts ..	161	66	48	118	89
All Areas	185	82	86	128	121

It will be seen that, as usual, urban mortality was much in excess of rural. The great excess in the North is not a constant feature of the returns, the distribution of mortality in different sections of the country varying much from year to year.

Table XXIX shows that, as usual, the proportion of total deaths occurring in the first year of life declined with increasing urbanization.

Table XXIX.—Whooping Cough, 1921 : Deaths under One Year of Age per Cent. of those at all Ages.

	North.	Midlands.	South.	Wales.	England and Wales.
London	—	—	43	—	43
County Boroughs ..	45	50	49	46	47
Other Urban Districts	52	56	50	52	53
Rural Districts ..	53	65	57	63	59
All Areas	48	56	46	54	50

Table 7 shows that the highest rate returned by any county was 391 per million in Anglesey, where the rate in 1920 had been very low (843 in Holyhead). Next to it come Northumberland (256) and Durham (255). There were no outstanding mortalities in the county boroughs, that of Warrington (394) being highest.

10. **Diphtheria.**—This heading now comprises 9A. Diphtheria and 9B. Membranous laryngitis, of the list of causes in use during 1911–20 (Part I, Appendix, page 482). The remaining portion of the old heading “Diphtheria and Croup”—9C, Croup—has been transferred to 98(2) Laryngitis, but as inquiry is made into all such deaths those so classed have for the most part been ascertained not to be due to diphtheria (Table XLIX). The change is of very little numerical importance, the numbers of deaths classed to 9 A, B and C in 1920 having been 5,641, 7 and 18. In other words, the term croup has practically died out from death certification, and when employed Table XLIX and its predecessors show that as a rule it does not imply diphtheria.

The 4,772 deaths from diphtheria in 1921 include 2,298 of males and 2,474 of females. Table 4 shows that the number of females dying from this disease is consistently greater than that of males, but from Table 5 it would appear that the mortality of males is greater. The comparison here, however, is between crude rates, and after standardization mortality is found to have been higher for females in each of the five decades 1861–1910, diphtheria in this respect resembling whooping cough, though the female excess is much less.

The death-rate for persons of both sexes, 126 per million living, is shown by Table 6 to be slightly below the average for recent years. None the less, the recent records for this disease are in marked contrast to the substantial declines recorded for the other infectious diseases in Table 6. For instance, the quinquennial record shows that the decline from 1891–5, which was continuous for diphtheria and croup up to 1911–15, was completely arrested in 1916–20. And much the same statements apply if mortality under 15 years of age is alone considered.

Table XXX.—Diphtheria, 1921 : Civilian Mortality per Million Living at all Ages.

	North.	Midlands.	South.	Wales.	England and Wales.
London	—	—	255	—	255
County Boroughs ..	90	125	91	151	104
Other Urban Districts	100	137	120	145	122
Rural Districts ..	98	88	69	182	96
All Areas	94	120	165	158	127

The outstanding feature in Table XXX is the high mortality in London. The London rate has not been so high for twenty years, and not since 1897 has it before been twice that of the country at large. In fact, it was below the general average during each of the years 1912–16, but Table 23 shows that even during these years the proportion of notified cases was greater in London. The chief increase both in cases and in deaths occurred in 1920, but since then the London figures have gone up further, while those for the rest of the country have fallen. Table 27 shows that prevalence was greatest in the boroughs of Bermondsey and Greenwich. Apart from London the highest rates for each class of area are furnished by Wales, and here that of the rural districts is, contrary to general recent experience, highest of all, whereas in the Midlands and South it is much the lowest.

Table XXXI shows how far variation in mortality has been due to variation in prevalence and in fatality respectively.

Table XXXI.—Diphtheria, 1921 : Prevalence and Fatality.*

	Cases per 10,000 Population.					Deaths per 1,000 Cases.				
	North.	Midlands.	South.	Wales.	England and Wales.	North.	Midlands.	South.	Wales.	England and Wales.
London	—	—	36	—	36	—	—	70	—	70
County Boroughs	12	18	18	19	15	72	68	51	81	68
Other Urban Districts	12	19	19	18	17	83	73	64	80	74
Rural Districts	13	12	11	20	13	76	76	65	90	76
All Areas	12	17	25	19	18	76	72	67	83	72

* Excluding non-civilian cases and deaths.

There were proportionately fewer cases of the disease notified in the North than in the South of England, but their fatality was higher—an experience repeated year after year, the contrast being often much greater than in 1921. The fatality rate for the country at large, 7·2 per cent., is much the lowest in Table XXIV, sharing with enteric fever and scarlet fever decline from a maximum in 1918 to a minimum in 1921 for the 11 years which can be compared.

Table 7 shows that except for the small county of Denbigh mortality was higher in London than in any other county, and that Middlesex came next to London. These three counties all returned high rates also in 1920. The highest rate for any county borough was that of Merthyr Tydfil (281), but, quite exceptionally, this was lower than that of the highest county, Denbigh (297), where the rate in the large rural district of Wrexham reached 454, while the prevalence in three smaller rural districts was still greater (Table 27).

11. Influenza.—The deaths assigned to this cause numbered 8,995—4,511 of males and 4,484 of females—yielding a mortality of 237 per million persons living. This is seen from Table 5 to be the lowest rate since 1917. Of the nine months dealt with in Table 18, March returned the greatest mortality, as it did also in 1920, but a more serious outbreak commenced in November, and, increasing throughout December, reached its culmination in January, 1922.

The age distribution of influenza mortality, which underwent a sudden and remarkable change at the outset of the great epidemic of 1918, manifested in 1921 a continuance of the reversion towards the earlier type (1890–1917) which had been in progress during the two preceding years. Table 1 of the special Influenza Supplement to the Report for 1918 shows the age distribution of the mortality (standardized, and, to permit of comparison throughout the period of the war, for females only), for each of these years. The average for the whole period compares as follows with the corresponding figures for 1918–21 :—

	1890- 1917.	1918.	1919.	1920.	1921.
0-	104	249	193	186	160
15-	107	454	366	281	177
35-	181	176	197	201	182
55-	388	98	184	229	304
75-	220	23	60	103	177
	1,000	1,000	1,000	1,000	1,000

Since 1918 there has been a continuous fall in the proportions of deaths at 0-15 and 15-35, and a continuous rise in those at 55-75 and 75 and upwards ; but the former remain considerably above, and the latter considerably below, those prevalent before 1918. In other words the transfer of the stress of mortality from late to early life which marked the great epidemic still held good to a considerable extent in 1921.

If the facts are examined quarter by quarter, it is found that the return towards the older type of age incidence affected chiefly the first half of the year, early life suffering more and the later ages less during the third and fourth quarters.

Another respect in which the experience of 1921 has reverted from that of the most recent preceding years towards an earlier normal is in regard to sex incidence of mortality. From 1913 to 1920 the rate for males exceeded that for females by about 20 per cent., as also in 1890, but from 1892 to 1910 male excess was slight and inconstant. It has now fallen from 23 per cent. in 1920 to 10 per cent. in 1921.

The distribution of influenza mortality throughout the country is indicated in Table XXXII.

Table XXXII.—Influenza, 1921 : Civilian Mortality per Million Living at all Ages.

	North.	Mid-lands.	South.	Wales.	England and Wales.
London	—	—	227	—	227
County Boroughs ..	263	190	234	87	229
Other Urban Districts ..	267	244	248	229	251
Rural Districts	291	216	230	212	236
All Areas.. ..	268	219	234	195	238

On the whole the rates are fairly uniform, especially as regards class of area, there being little urban excess. For each class of area the highest rate is returned by the North, and the lowest by Wales, the order in all three cases being North, South, Midlands, Wales.

The subdivision of influenza deaths into those with pneumonic, other pulmonary, and non-pulmonary complications, and without stated complication, is made in 1921 for the first time, the title in the International List having been divided into (*a*) deaths with, and (*b*) deaths without, mention of pulmonary complications. It will be seen from Table 5 that pneumonic complications are commoner in males to a significant extent, and other pulmonary complications, as well as deaths without stated complication, in females. This experience can be compared with that of 1911 and of the epidemic of 1918–19, when causes complicating influenza mortality were tabulated in detail. In both cases the proportion of deaths complicated by pneumonia was definitely in excess for males and that of deaths with other pulmonary complications and without stated complication in some excess for females, as in 1921. It appears therefore that even the minor sex differences brought out by Table 5 in regard to the two latter classes of returns may have significance.

23. Encephalitis Lethargica.—This malady first makes its appearance in the records for 1918 (Tables 4 and 5) when, however, nearly all the deaths were returned under other designations. Since then notifications have increased from 541 in 1919 to 1,470 in 1921, and deaths from 294 in 1919 to 729 in 1921. Particulars of the sex and age incidence of mortality from this cause are shown for the first time in Table 17, as 1921 marks its first appearance in the list of causes of death distinguished. Mortality was much the same for both sexes and was widely spread over the whole of life except extreme old age, being comparatively heavy at 45–60. Between the ages of 20 and 45 there were 140 deaths of females and only 81 of males. The distribution throughout the country was fairly uniform both by section of the country and by class of area, rates per million being as follows :—North 18, Midlands 21, South 20, Wales 16, London 16, County Boroughs 18, other Urban Districts 22, Rural Districts 19. Table 24 shows that rather more than half the total cases were notified during the first eight weeks of the year, but Table 18 records only one third of the deaths as having occurred during January and February. The proportion of deaths registered to cases notified during the year was almost exactly 50 per cent.

24. Meningococcal Meningitis.—This title corresponds to 61A, cerebro-spinal fever, and 61B, posterior basal meningitis, of the 1911–20 List. Experience having shown that the differentiation of the two types of meningococcal infection yields results of somewhat doubtful value, this has been abandoned, but the distinction of meningococcal disease from other forms of meningitis is now made internationally. The mortality of 1921 is the lowest since the epidemic outburst of 1915 (Table 5). As in other years, it was considerably higher for males, though the great male excesses recorded during the war, and caused mainly by deaths of non-civilians, have ceased to occur.

Table XXXIII.—England and Wales : Standardized Mortality from Tuberculosis, 1851–1921.

	All Forms.			Pulmonary.			Non-Pulmonary.		
	Males.*	Females.*	Persons.	Males.*	Females.*	Persons.	Males.*	Females.*	Persons.
1851–60 ..	3,477	3,483	3,478	2,694	2,854	2,772	783	629	706
1861–70 ..	3,357	3,177	3,263	2,612	2,578	2,590	745	599	673
1871–80 ..	3,080	2,701	2,882	2,359	2,119	2,231	721	582	651
1881–90 ..	2,656	2,251	2,444	1,966	1,672	1,810	690	579	634
1891–1900	2,285	1,780	2,021	1,633	1,226	1,418	652	554	603
1901–10 ..	1,891	1,424	1,646	1,358	951	1,143	533	473	503
1911–20 ..	1,705	1,210	1,446	1,306	868	1,076	399	342	370
1851–55 ..	3,641	3,636	3,638	2,814	2,967	2,890	827	669	748
1856–60 ..	3,320	3,338	3,328	2,581	2,747	2,663	739	591	665
1861–65 ..	3,376	3,262	3,316	2,607	2,649	2,625	769	613	691
1866–70 ..	3,343	3,103	3,217	2,617	2,511	2,558	726	592	659
1871–75 ..	3,148	2,782	2,956	2,452	2,219	2,327	696	563	629
1876–80 ..	3,021	2,631	2,818	2,273	2,026	2,141	748	605	677
1881–85 ..	2,744	2,389	2,558	2,053	1,809	1,922	691	580	636
1886–90 ..	2,578	2,128	2,342	1,885	1,544	1,704	693	584	638
1891–95 ..	2,388	1,910	2,138	1,704	1,326	1,504	684	584	634
1896–1900	2,187	1,661	1,912	1,565	1,132	1,337	622	529	575
1901–05 ..	2,007	1,497	1,739	1,442	999	1,208	565	498	531
1906–10 ..	1,781	1,353	1,556	1,278	907	1,082	503	446	474
1911–15 ..	1,619	1,205	1,402	1,211	849	1,020	408	356	382
1916–20 ..	1,804	1,210	1,493	1,411	885	1,136	393	325	357
1851 ..	3,580	3,553	3,566	2,730	2,898	2,817	850	655	749
1852 ..	3,632	3,622	3,627	2,756	2,954	2,858	876	668	769
1853 ..	3,837	3,843	3,840	2,968	3,172	3,074	869	671	766
1854 ..	3,599	3,590	3,595	2,731	2,928	2,833	868	662	762
1855 ..	3,539	3,577	3,559	2,754	2,967	2,864	785	610	695
1856 ..	3,300	3,326	3,313	2,549	2,742	2,649	751	584	664
1857 ..	3,358	3,413	3,386	2,568	2,805	2,690	790	608	696
1858 ..	3,334	3,370	3,353	2,564	2,794	2,683	770	576	670
1859 ..	3,303	3,312	3,308	2,545	2,734	2,643	758	578	665
1860 ..	3,282	3,285	3,284	2,552	2,746	2,652	730	539	632
1861 ..	3,403	3,381	3,392	2,584	2,760	2,675	819	621	717
1862 ..	3,297	3,217	3,256	2,536	2,652	2,596	761	565	660
1863 ..	3,317	3,210	3,261	2,525	2,610	2,569	792	600	692
1864 ..	3,404	3,240	3,319	2,627	2,645	2,636	777	595	683
1865 ..	3,435	3,274	3,352	2,637	2,663	2,651	798	611	701
1866 ..	3,484	3,295	3,386	2,728	2,707	2,717	756	588	669
1867 ..	3,428	3,223	3,322	2,669	2,638	2,653	759	585	669
1868 ..	3,203	2,995	3,096	2,462	2,421	2,441	741	574	655
1869 ..	3,240	2,993	3,113	2,507	2,418	2,461	733	575	652
1870 ..	3,331	3,027	3,174	2,589	2,467	2,526	742	560	648
1871 ..	3,234	2,934	3,079	2,526	2,391	2,457	708	543	622
1872 ..	3,160	2,841	2,995	2,465	2,307	2,384	695	534	611
1873 ..	3,112	2,735	2,917	2,408	2,202	2,302	704	533	615
1874 ..	3,014	2,588	2,794	2,315	2,063	2,185	699	525	609
1875 ..	3,195	2,823	3,002	2,417	2,216	2,313	778	607	689
1876 ..	3,070	2,682	2,870	2,342	2,118	2,227	728	564	643
1877 ..	3,057	2,655	2,849	2,292	2,083	2,184	765	572	665
1878 ..	3,133	2,723	2,921	2,327	2,112	2,216	806	611	705
1879 ..	2,987	2,566	2,770	2,254	2,002	2,124	733	564	646
1880 ..	2,850	2,525	2,682	2,039	1,890	1,962	811	635	720

* See note * on next page.

Table XXXIII.—England and Wales : Standardized Mortality from Tuberculosis, 1851–1921—*continued*.

	All Forms.			Pulmonary.			Non-Pulmonary.		
	Males.*	Females.*	Persons.	Males.*	Females.*	Persons.	Males.*	Females.*	Persons.
1881	2,729	2,374	2,546	2,029	1,824	1,923	700	550	623
1882	2,783	2,415	2,593	2,053	1,845	1,945	730	570	648
1883	2,777	2,455	2,611	2,072	1,882	1,974	705	573	637
1884	2,769	2,414	2,586	2,028	1,813	1,917	741	601	669
1885	2,639	2,280	2,453	1,971	1,746	1,855	668	534	598
1886	2,714	2,276	2,488	1,964	1,680	1,817	750	596	671
1887	2,501	2,114	2,301	1,809	1,568	1,685	692	546	616
1888	2,471	2,030	2,243	1,795	1,483	1,634	676	547	609
1889	2,502	2,070	2,279	1,795	1,489	1,637	707	581	642
1890	2,682	2,141	2,403	1,949	1,559	1,748	733	582	655
1891	2,597	2,071	2,325	1,853	1,476	1,659	744	595	666
1892	2,388	1,937	2,156	1,684	1,360	1,517	704	577	639
1893	2,404	1,927	2,158	1,689	1,339	1,509	715	588	649
1894	2,229	1,760	1,987	1,605	1,244	1,419	624	516	568
1895	2,318	1,841	2,072	1,600	1,263	1,426	718	578	646
1896	2,145	1,668	1,899	1,512	1,153	1,327	633	515	572
1897	2,192	1,690	1,933	1,552	1,171	1,356	640	519	577
1898	2,180	1,667	1,915	1,528	1,135	1,325	652	532	590
1899	2,189	1,645	1,908	1,561	1,131	1,339	628	514	569
1900	2,204	1,623	1,904	1,575	1,114	1,337	629	509	567
1901	2,084	1,546	1,807	1,486	1,054	1,263	598	492	544
1902	2,001	1,494	1,739	1,450	1,022	1,229	551	472	510
1903	2,008	1,492	1,741	1,416	990	1,196	592	502	545
1904	2,046	1,531	1,780	1,443	1,027	1,228	603	504	552
1905	1,872	1,411	1,634	1,329	944	1,130	543	467	504
1906	1,875	1,434	1,647	1,334	955	1,138	541	479	509
1907	1,835	1,392	1,606	1,315	948	1,125	520	444	481
1908	1,812	1,373	1,585	1,282	928	1,099	530	445	486
1909	1,737	1,325	1,524	1,238	900	1,063	499	425	461
1910	1,619	1,238	1,422	1,145	841	988	474	397	434
1911	1,645	1,280	1,452	1,206	883	1,035	439	397	417
1912	1,551	1,180	1,356	1,169	837	993	382	343	363
1913	1,540	1,158	1,339	1,133	807	961	407	351	378
1914	1,548	1,165	1,347	1,164	839	992	384	326	355
1915	1,889†	1,241	1,549†	1,452†	887	1,155†	437†	354	394†
1916	2,032†	1,239	1,619†	1,600†	893	1,230†	432†	346	389†
1917	2,334†	1,314	1,801†	1,860†	949	1,384†	474†	365	417†
1918	2,518†	1,378	1,924†	2,052†	1,037	1,522†	466†	341	402†
1919	1,425	1,112	1,261	1,097	824	953	328	288	308
1920	1,268	1,000	1,128	966	733	843	302	267	285
1921	1,249	1,004	1,121	965	754	854	284	250	267

* The method of standardizing the sex rates for the separate years up to, and including, 1910, differs somewhat from that employed for subsequent years and for the decennial and quinquennial periods, the standard population for each sex being in the first case the numbers of that sex in a million composed of both sexes in 1901, and in the second the full million of both sexes. (See Annual Report for 1912, p. xxxvii). The difference in the results of the two methods can be ascertained approximately by comparing the average of the five yearly rates with the rate shown for the quinquennium. Rates for persons are, of course, unaffected, being calculated by the same method throughout.

† Civilians only.

31-37. **Tuberculosis.**—The deaths assigned to tuberculous affections in the aggregate numbered 42,678—22,899 of males and 19,779 of females—or 133 more than those so classified in the previous year. The crude mortality, which in the case of this disease is little affected by standardization (Table XXXIV), amounted to 1,127 per million, or a trifle less than that of the previous year, the slight increase in deaths having been more than compensated for by increase of population. The proportion of the total death-rate due to this cause was 9·3 per cent. As the increase in tuberculosis mortality which occurred in this and many other countries during the war, and which was prolonged and accentuated by the great influenza epidemic of 1918-19, has now passed so far into the background that the trend of mortality can again be studied apart from its disturbing effect; and as the material for such an examination, in the shape of standardized death-rates covering the whole period available for study, has not hitherto been assembled in convenient form in the Registrar-General's Reports, this is now done in Table XXXIII.

It was pointed out in last year's Report that the great fall then recorded in tubercle mortality had not merely wiped out the rise which occurred during the years of war but carried the reduction to the point to which continuance of the remarkably steady pre-war decline would have led. The fact that the ground gained has been more than maintained in 1921 goes to show that the decline was not, in the main at all events, an accidental after effect of the great influenza epidemic resulting from the deaths in 1918 of phthisical patients who would otherwise have survived to swell the mortality of 1920. For the mortality of 1921 can have been but little influenced by this consideration, and yet a further slight fall has occurred, instead of the rise to be expected if the cause of the previous fall had been of the nature suggested.

The mortality to be expected in 1921 for persons of both sexes on the assumption of continuance of the rate of fall which has been in steady progress now for about 55 years, apart from temporary interruption during the years of war, may be seen from Diagram 3. This diagram includes projections on both the actual and the logarithmic scales in order that the progress of the actual decline may be readily compared with the changes which have occurred in its rate. Projection on the actual scale is indicated by thick lines, and the reflection of the same rates upon the logarithmic scale by thin lines. Dealing first with the former only:—the irregular line represents the standardized death-rates; the smooth continuous line is a curve of the second degree (calculated from the equation $y = -141 \cdot 10666 - 41 \cdot 38480x + \cdot 08941x^2$, where x represents difference of date and y difference of rate from 1890*) fitted to these rates for the years

*Similar equations for the other fitted curves dealt with in Diagram 4 are as follows:—

Tuberculosis, Males	..	..	$y = -177 \cdot 31031 - 39 \cdot 37061x - \cdot 06590x^2$.
„ Females	..	..	$y = -107 \cdot 19759 - 43 \cdot 20102x + \cdot 24140x^2$.
Pulmonary Tuberculosis, Persons	..	..	$y = -119 \cdot 37935 - 36 \cdot 11745x + \cdot 31996x^2$.
„ „ Males	..	..	$y = -148 \cdot 96804 - 32 \cdot 69622x + \cdot 19106x^2$.
„ „ Females	..	..	$y = -91 \cdot 84192 - 39 \cdot 23765x + \cdot 44778x^2$.

1866–1914; while the broken line represents what the mortality of each year would have been if the rate of fall from 1866 to 1914 had been uniform. Both the fitted curve and the curve of uniform decline have been continued to 1921, while the latter has been carried back as far as space permits to mark the fact that the rate of fall from 1866 onwards did not apply before that date.

Perhaps the most remarkable feature of the diagram is the surprising constancy of the decline over so long a period as 55 years—1866–1921. The curve has been fitted to the 49 years 1866–1914 only, because of the great disturbance of the trend of events during the years of war. Manifestly the rates for those years could not be taken into account in measuring this trend, so the method followed has been to measure it in the first place for the years preceding the disturbance only, and then by extrapolation to ascertain how far the tendency towards fall has been continuous during and after the period of disturbance by comparing the recorded with the “expected” values for 1920 and 1921. It will be seen that the difference is very small. The rate for 1920 is 2·5 per cent. above that predictable by extrapolation from the fitted curve, but 6·0 per cent. below what would have resulted from continuance of the rate of fall during 1866–1914; while for 1921 the same differences are +5·3 and –4·8 per cent. respectively. The actual fall for the seven years 1914–21 is 16·8 per cent.

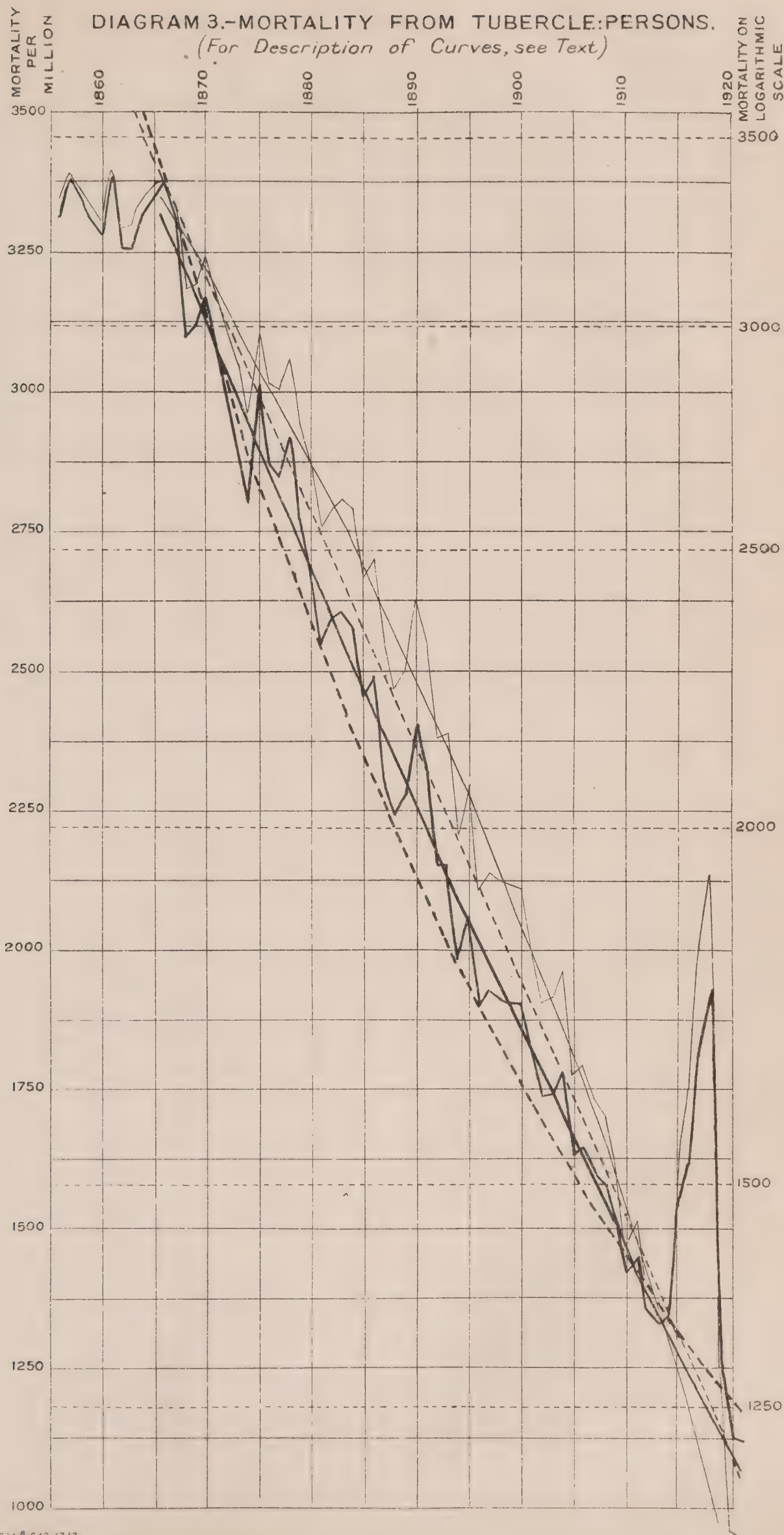
In the second place it is to be noted that this constancy is not in rate of fall, which has been increasing, but in actual amount of fall. The fitted curve is almost a straight line, being very slightly concave upwards, so we see after smoothing away the accidental yearly variations that the annual decrement of the rate has been as nearly as possible constant throughout the whole period. This of course implies a constantly accelerating *rate* of decline (broadly speaking) as is demonstrated by comparison of the fitted curve with the broken line representing constant rate of decline. At first the gradient of the fitted curve is the less steep of the two, but the two become more and more nearly parallel until the middle of the 49-year period, after which the fitted curve becomes increasingly the steeper of the two.

These facts are perhaps better brought out by the thin lines charting the same data upon the logarithmic scale, which has been so chosen as to coincide with the actual for the years 1866 and 1914, so that the changes in mortality rates and in rates of fall can be readily compared. In this case the broken line representing constant decline is of course straight, while the smooth continuous line representing the fitted curve, instead of being very slightly concave upwards, is obviously convex, its convexity representing the extent to which the rate of decline has increased.

Nothing, however, could be more unsafe than to assume that because the smoothed decline (ignoring war increase) has been almost exactly uniform in arithmetic progression for over half a

DIAGRAM 3.-MORTALITY FROM TUBERCLE: PERSONS.

(For Description of Curves, see Text)



century—for males the arithmetic decline has actually been slightly on the increase, but this has been rather more than counter-balanced by a somewhat greater decrease for females—continuance of the fall on this scale can be reckoned on. Even apart from the impossibility of assuming the future from the past, two circumstances point to the likelihood that this yearly decline will not be fully maintained much longer. In the first place the rate of fall implied by such a continuance is now increasing rapidly, and must do so at an ever increasing pace as mortality decreases further. This may be seen by comparison of the smooth continuous and the broken lines on each scale in Diagram 3. The lines representing the fitted curve and its continuation, after running for many years almost parallel with the broken lines representing constant rate of decline, are now beginning to approach the base line much more rapidly, and this divergence must continue to increase. In the second place the fall from 1891 onwards has been largely due to decline in mortality from non-pulmonary tubercle, practically one third of the decrease being so caused. If this decrease were to continue on the same scale for another twenty years mortality from non-pulmonary tubercle would have ceased. It is evident, therefore, that the slower decline from pulmonary tubercle, must, assuming continuance of present tendencies, form as time goes on a larger and larger proportion of the total.

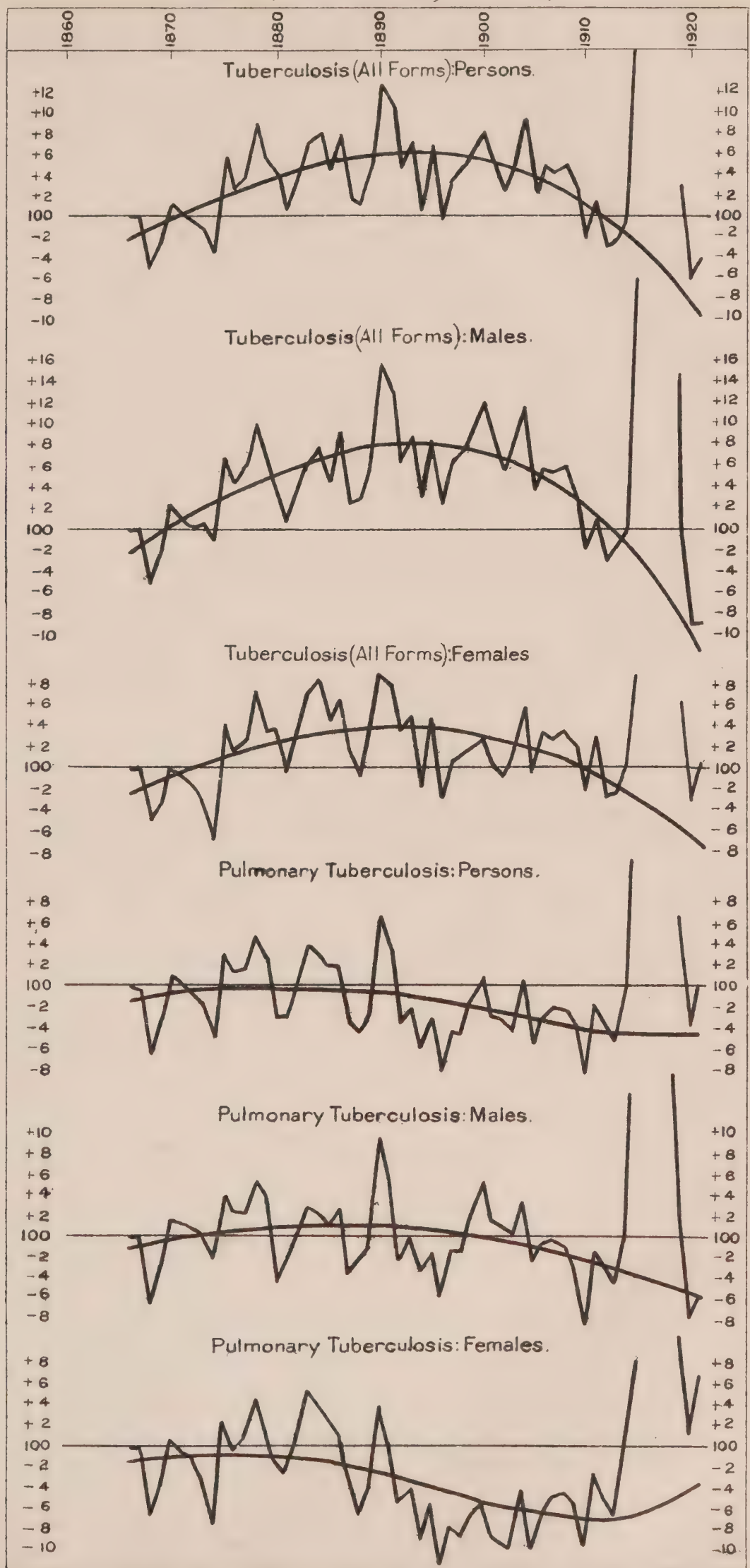
The importance of the latter consideration is brought out by Diagram 4. The top section of this corresponds with Diagram 3, the thick broken line in the latter, showing constant rate of fall from 1866 to 1914, being represented by the horizontal line, percentage deviations from which by the yearly records and by the curve fitted to them are plotted. This form of representation has been resorted to both because a series of diagrams corresponding to Diagram 3 would occupy too much space, and because it brings out better than the other the relationship of the curve of actual decline to that assuming constant rate of fall, and so the acceleration of the former. In some cases these two curves so nearly coincide as to make comparison between them difficult, but their differences can be magnified to any extent desired by choice of a suitable scale in Diagram 4. This latter shows that the decline for both sexes jointly from pulmonary tuberculosis has recently (ignoring war increase) been at the average rate for the years 1866–1914, to which it has all along closely adhered; whereas that from tuberculosis generally has latterly been in great and growing excess of the constant rate, as evidenced by increasing divergence of the smooth curve from the horizontal line. It is evident, therefore, that exhaustion of the source of improvement provided by non-pulmonary tubercle must soon tend to reduce the recent rate of decline from tuberculosis generally to that applying to phthisis from 1866 to 1914, which, however, was slightly greater than for all forms of tuberculosis during the same period.

The upper three sections of Diagram 4 show that for both sexes, but especially for males, mortality from tuberculosis has been falling since 1866 at an ever increasing rate. This is shown by the relation of the smoothed curve (and the charted records which it smooths) to the curve showing constant rate of decline. Up to about 1893 the rate of actual fall was less than the general average, though decreasingly so, but since then it has been in excess of it to an ever increasing extent. It will also be seen that for males the post-war decline has practically restored the pre-war position, bringing the rates for 1920 and 1921 down almost to the levels reached by prolongation of the 1866-1914 fitted curve ; but that for females this restoration has been less complete, having brought their rates for the last two years down only to the level reached by prolongation of the curve of constant decline. (Of course it must be borne in mind that each of the horizontal lines in the diagram represents a series of rapidly decreasing mortalities.) The increase in rate of decline shown in Diagram 4 is at its maximum for tuberculosis (all forms) of males. In this case the slight upward concavity of the smoothed curve in Diagram 3 is replaced by a slight upward convexity, this being the only instance amongst the six declines compared in Diagram 4 where the fall has been in excess of a constant rate not only in geometric but even in arithmetic progression.

With pulmonary tuberculosis the case, as represented by the lower three sections of Diagram 4, is somewhat different. For males the trend of events has been similar to that shown in the case of tuberculosis generally, the rate of fall having been consistently on the increase, though it has remained throughout much nearer that of constant decrease. In this case the rates recorded for 1920 and 1921 are not only below those predictable on the assumption of constant decrease but even below those obtainable by extrapolation from the fitted curve. But for females the maximum downward deviation of the recorded rate from that of constant decline had been experienced before 1914, following a particularly rapid fall from 1890 to 1896, and the rate of decrease was therefore even then falling off. This process appears to have continued, for in this section alone of the diagram have the rates for 1920 and 1921 failed to fall to the level predictable on the assumption of constant decrease. It may be remarked that although in this section of the diagram the fitted curve appears, in consequence presumably of the abrupt fall during 1890-96, to be a very imperfect representation of the records for 1890-1914, this is scarcely noticeable on comparison of the actual curves themselves, as any want of correspondence is greatly exaggerated by the method of construction followed in Diagram 4.

When the phthisis records for males and females are compounded to form that for persons the recent tendencies of males to increased and of females to decreased rate of decline cancel each other, the resultant rate for 1914-21 being as nearly

DIAGRAM 4-STANDARDIZED MORTALITY FROM TUBERCULOSIS.
 DEVIATIONS (%) FROM CURVE SHOWING UNIFORM RATE OF DECLINE DURING 1866-1914.
 (For Description of Curves, see Text.)



as possible the same as the average for 1866–1914, although the mortality for 1921 extrapolated from the fitted curve is about 5 per cent. lower than that predictable on the assumption of constant rate of decline.

The recent course of mortality from non-pulmonary tubercle differs greatly from that of pulmonary and of total tuberculosis. In this case, as already noted in connexion with infant mortality on page 19, but little decline occurred to accompany that in mortality from pulmonary tubercle up to about 1891, after which year a far more rapid decline than that applying to the pulmonary form gradually set in and continued at an ever increasing pace for about twenty years. From 1915 to 1918 the rates went up suddenly along with those from pulmonary tubercle, but with this difference, that the latter reached their maximum elevation in 1918, while decline of the former set in after 1917. This is of interest as confirming the evidence adduced in the Report for 1919 that the peak of the elevation of tuberculosis mortality had already been passed in 1917, and a decline had set in, when the pandemic of influenza in the latter part of 1918 superposed upon the declining rate an additional mortality which apparently located the maximum of the rise in that year. Non-pulmonary tubercle shared in the main rise but not in that superposed by influenza, and so its curve more correctly locates the summit of the former. Any explanation therefore of the rise which occurred during the years of war must take note of the fact that its summit was passed a year or more before the war ended.

It will be seen from the following extract from a communication by the United States Public Health Service (quoted from the *New York Times* of 26th January, 1923), that this experience is not peculiar to England and Wales.

“When the effect of the influenza epidemics in 1918–19 and 1920, in apparently or actually increasing the pulmonary tuberculosis death-rate in those years is taken into account the wave of increased mortality is more accurately described as beginning in 1915 or 1916, reaching its crest in 1917, and beginning to decline well before the major influenza epidemics occurred. This wave occurred in European countries also but began earlier than in the United States, reached a much greater magnitude, and subsided later In England and Wales a marked rise in the death-rate began as early as 1914, reaching its peak in 1918, and falling rapidly to a low point in 1920.”

The English experience was more similar to that of the United States than the American service realized. The slight rise in 1914 may or may not mark the commencement of the wave, for its magnitude does not exceed that of a number of the yearly fluctuations met with during the preceding years of steady decline; and the effect of allowance for influenza in locating the summit of the wave in 1917 is the same in both countries. If it seemed doubtful, in view of the dates, whether war hardship

could provide the explanation of the rise in this country, the difficulty must surely be still greater in the case of the United States.

The curves from non-pulmonary tubercle from 1891 to 1914 resemble that from tuberculosis (all forms) of males more than any of the others dealt with in Diagram 4, but greatly exaggerate its characteristics, the calculated curves corresponding to that in Diagram 3 having in this case a very considerable upward convexity. It follows from this that the prolongations of these curves since 1914 are declining very rapidly indeed, so that the rates recorded for 1920 and 1921 are in considerable excess of those extrapolated from the smoothed curves. They are, however, considerably below those predictable on the assumption of constant rate of decrease during 1891 to 1914 and later.

The delay in the onset of considerable fall in mortality from non-pulmonary tubercle, as compared with that from pulmonary, may be seen from Table 10 of the Supplement to the seventy-fifth Report, Part III, to be due in part to the fact that in 1881-90, when mortality at 0-5, which at that time accounted for no less than 73 per cent. of the deaths at all ages, began to fall, that at later ages, which had before been falling, began to rise. This rise lasted for varying periods, continuing for all ages over 25 until 1901-10, since when decline has occurred at all ages. It is to the latter change that the recent acceleration in the rate of decline at all ages jointly is due, progress at 0-5 having now been steady for many years. The increase applies to all the locations of tubercle distinguished in the table, but at adult ages sites other than the meninges and peritoneum have greater relative importance than in childhood, and it is to them that the rise is mainly due. It may perhaps be surmised that the increase was due to increased recognition of the tuberculous nature of pathological conditions formerly returned under local headings; and that the fall subsequent to 1901-10, which has occurred notwithstanding inclusion with tubercle of spinal caries for the first time in 1909, represents the result of a genuine decrease in non-pulmonary, accompanying that in pulmonary, tubercle.

Table XXXIV analyses mortality from tuberculosis by sex and age, and compares the experience of 1921 with those of other recent years, excluding the period of temporary increase during the war.

The reduction in mortality, as compared with the lowest level attained before the war, in the years 1912-14, is almost universal throughout the table, the only exception of any importance applying to females aged 15-25. This exception, however, is a very remarkable and important feature of the returns. A considerable increase of the mortality of females of these ages in 1921 has greatly accentuated the contrast between their experience and that of the remainder of the population to which attention has been called in several previous reports.

Table XXXIV.—England and Wales : Mortality from Tuberculosis
(All Forms) per Million Population, 1912-14, 1920, and 1921.

				Males.			Females.			Persons.		
				1912-14	1920	1921	1912-14	1920	1921	1912-14	1920	1921
All Ages	Crude .. ..	..	..	1,569	1,279	1,266	1,167	996	999	1,361	1,131	1,127
	Standardized ..	..	..	1,546	1,268	1,249	1,168	1,000	1,004	1,347	1,128	1,121
0-	..	..	..	2,063	1,327	1,250	1,701	1,097	1,042	1,883	1,213	1,148
5-	..	..	..	566	426	387	572	437	393	569	432	390
10-	..	..	..	442	392	342	685	583	542	564	487	442
15-	..	..	..	927	?	?	1,214	1,300	1,384	1,071	?	?
20-	..	..	..	1,478	?	?	1,326	1,418	1,578	1,398	?	?
25-	..	..	..	1,774	?	?	1,369	1,251	1,278	1,561	?	?
35-	..	..	..	2,233	?	?	1,405	1,138	1,104	1,804	?	?
15-45	..	..	..	1,681	1,468	1,473	1,342	1,256	1,298	1,505	1,354	1,380
45-	..	..	..	2,437	2,043	2,059	1,208	965	926	1,798	1,472	1,455
55-	..	..	..	2,283	1,657	1,649	1,004	780	778	1,608	1,206	1,199
65-	..	..	..	1,421	1,121	1,044	767	675	617	1,057	879	813
75-	..	..	..	649	521	444	496	421	463	558	461	455
85 and upwards	..	..	..	260	400	312	246	277	250	251	322	273

It has now risen, both for ages 15-20 and 20-25, to a level above that recorded for any quinquennium of the present century other than the war period 1916-20; and we have to go back to 1896-1900, when the general mortality from tubercle was about 71 per cent. higher than in 1921, to find such high rates. These statements apply also to pulmonary tuberculosis. How far they apply to males of similar age cannot be precisely stated, for want of an estimate of the population at risk, but the rates in Table XXXIV for the age group 15-45 suggest that any similar increase in the case of male youths is on a much lower scale, as the reduction since 1912-14 at 15-45 is substantial for males, but only slight for females.

It has been natural to look upon this increase as an effect of increased factory employment of young females during the war, but certain of the facts connected with it suggest that this explanation is not wholly satisfactory. Even if we assume that the expression of war infection in the form of mortality would be so much delayed as to account for increase in 1921 of the contrast between these and other ages, there remains the fact that some indications of the approaching change were in evidence before the war. Quinquennial records of female age mortality show that for ages 10-15 and 15-20 the large and steady reduction which had been previously in progress greatly abated about the end of the century and came to an end altogether in 1906-10, both rates showing an increase in 1911-15, whereas at all other ages decrease continued. These statements apply also to pulmonary tuberculosis. The decline at 10-15 has been resumed since 1918, and the rates for this age were lower in 1921 than any previously recorded; but this, as stated, has not occurred at 15-20, with which 20-25 is now conjoined in recording a considerable increase. It seems evident therefore that the tendency towards reduction

of the age of maximum mortality (from 35–45 in 1915 and previous years to 20–25 from 1916 onwards, except in 1917, when it was 15–20) had shown itself for some years before the change occurred, though its suddenness when it did occur is most remarkable.

31. Tuberculosis of the Respiratory System.—As a result of the revision of the list of causes of death in 1920 this heading no longer includes acute miliary tuberculosis, the classification thus reverting to that followed in this country prior to 1911. The distinction between acute and chronic forms of the disease is also abandoned. The substitution of respiratory for pulmonary in the title has no practical effect upon the contents, for laryngeal tubercle was already included under this heading, and in the year 1912, for which the deaths have been published in full detail, there was but one, returned as due to tubercle of the posterior nares, which would be included under the new but excluded from the old heading.

The 33,505 deaths from respiratory tubercle form 79 per cent. of the total allocated to tuberculosis, and 7·3 per cent. of those from all causes.

Table XXXV.—England and Wales : Mortality from Tuberculosis of the Respiratory System (31) per Million Population, 1912–14, 1920, and 1921.

				Males.			Females.			Persons.		
				1912–14	1920	1921	1912–14	1920	1921	1912–14	1920	1921
All Ages	Crude	..	..	1,187	998	1,002	847	757	777	1,011	871	884
	Standardized	..	..	1,155	964	965	826	731	754	981	841	854
0–	..	..	..	251	183	155	217	151	134	234	167	144
5–	..	..	..	118	91	70	161	117	119	140	104	94
10–	..	..	..	175	153	126	394	331	327	285	241	226
15–	..	..	..	705	?	?	975	1,037	1,143	841	?	?
20–	..	..	..	1,299	?	?	1,166	1,265	1,418	1,229	?	?
25–	..	..	..	1,626	?	?	1,242	1,121	1,155	1,425	?	?
35–	..	..	..	2,092	?	?	1,280	1,022	993	1,672	?	?
15–45	..	..	..	1,515	1,290	1,312	1,189	1,102	1,151	1,346	1,189	1,226
45–	..	..	..	2,292	1,907	1,921	1,098	843	823	1,671	1,343	1,335
55–	..	..	..	2,120	1,515	1,526	880	651	657	1,465	1,071	1,078
65–	..	..	..	1,282	981	900	638	526	494	923	734	680
75–	..	..	..	542	387	356	369	287	323	439	327	336
85 and upwards	..	..	..	188	240	273	183	138	136	184	176	187

The features of this table generally resemble those of Table XXXIV, and have been already in part discussed in connexion therewith.

38. Syphilis.—The crude total mortality directly attributed to this disease, 47 per million living (Table 5), is the lowest recorded since 1910, when it stood at 46. As over two-thirds of the deaths so returned are of infants under twelve months of age the total mortality is largely influenced by the birth-rate, tending to rise and fall with it. But as the infant mortality from syphilis

in 1921, 1·43 per 1,000 births, was the lowest since 1912, the sudden increase which occurred in 1917 and has since gradually abated, as best measured by the infant mortality figures in Table 9, is seen now to be definitely at an end.

The more comprehensive death-rate obtained by including deaths from tabes dorsalis, general paralysis of the insane, and aneurism, as well as those directly attributed to syphilis, stands at 132 per million as against 136 in 1919 and 1920. In 1917 it was 176 per million, and from 1901, when the record is first available, till 1918 it only varied between that figure and 155 (in 1910), so the returns for the last three years represent a very definite decline (chiefly in general paralysis).

41 (1). **Vaccinia.**—Three deaths, all of infants under one year of age, have been classed to this cause as against nine in 1920. In addition to these, three deaths of infants were allocated to erysipelas, and two to septic infection [41(2)], following vaccination. Of the three deaths classed to vaccinia, two, returned as “generalized vaccinia” and “toxaemia following vaccination” appear to have been regarded as direct consequences of vaccination; but in the case of the third, ascribed to “infantile diarrhoea, vaccination 14 days,” it seems likely that diarrhoea was regarded as the cause of death and that vaccination was mentioned only because of its recent performance.

43–49. **Cancer.**—The deaths ascribed to cancer during 1921 number 46,022—20,649 of males, and 25,373 of females. For both sexes these numbers are the highest yet recorded.

Of these deaths, 33,177 were referred to carcinoma, 2,390 to sarcoma, and 10,455 to “cancer” not otherwise defined. Both the carcinoma and the sarcoma figures are the highest hitherto recorded for each sex.

Table XXXVI shows the standardized death-rate from malignant disease for each sex and the group rates for persons of different ages from which these are derived, but the precise rates

Table XXXVI.—England and Wales : Mortality from Cancer per Million Population, 1911–14, 1920, and 1921.

				Males.			Females.			Persons.		
				1911–14	1920.	1921.	1911–14	1920.	1921.	1911–14	1920.	1921.
All Ages {	Crude ..	..	..	934	1,097	1,142	1,134	1,219	1,281	1,037	1,161	1,215
	Standardized ..	..	..	914	959	988	994	993	1,028	955	975	1,007
0–	..	..	..	25	22	20	20	18	16	22	20	18
15–	..	..	..	44	?	?	35	32	30	39	?	?
25–	..	..	..	111	?	?	156	151	152	135	?	?
35–	..	..	..	280	?	?	564	492	511	427	?	?
40–	..	..	..	634	?	?	1,136	1,028	1,042	894	?	?
15–45	..	..	..	179	177	168	299	283	290	241	234	232
45–	..	..	..	1,285	1,361	1,356	1,913	1,917	1,880	1,611	1,659	1,639
50–	..	..	..	2,266	2,344	2,395	2,860	2,750	2,837	2,576	2,556	2,627
55–	..	..	..	3,698	3,817	3,978	4,008	3,903	3,963	3,861	3,861	3,970
60–	..	..	..	5,595	5,783	5,834	5,334	5,422	5,594	5,456	5,598	5,711
65–	..	..	..	7,279	7,989	8,340	6,557	6,946	7,490	6,885	7,434	7,889
70–	..	..	..	9,193	9,008	9,658	8,294	8,045	8,416	8,679	8,469	8,966
75–	..	..	..	10,033	10,930	11,644	9,534	10,087	10,460	9,739	10,430	10,945
80–	..	..	..	9,170	11,403	11,487	9,236	10,969	11,802	9,210	11,136	11,680
85 and upwards	..	..	..	8,376	7,285	10,009	9,297	10,417	12,561	8,970	9,273	11,621

shown will be subject to modification when the age returns of the 1921 Census have been tabulated. As here shown, the standardized rates for both sexes increased in 1921, that of males by 3, and that of females by 4 per cent. Both rates are the highest yet recorded, though in the case of females the excess over that returned for 1913 (1,023), is very small.

It will be seen that the comparatively low rates for persons of less than 45 years of age show no increase during the decennium. In fact, for females, in whose case separate statement of the rate for each age group is possible, the 1921 rate is lower than that for 1911-14 at each age under 60. After 45 for males and 60 for females the rates for every age group are higher in 1921 than in 1911-14, while below those ages they are lower. The excess at the higher ages increases on the whole, as life advances, to a maximum in extreme old age. This shifting of the stress of cancer mortality towards the latter end of life, independently

Table XXXVII.—England and Wales, 1921—Sites of Fatal Cancer.

		All Ages.	0-	5-	15-	25-	35-	40-	45-	50-	55-	60-	65-	70-	75-	80-	85-
		MALES.															
	All Sites	20,649	53	55	128	282	349	657	1,339	2,150	2,990	3,463	3,600	2,816	1,791	719	257
43	{ Lip	265	—	—	1	—	—	—	4	15	21	37	40	59	45	23	20
	{ Tongue	1,129	—	—	1	1	5	31	83	140	218	214	193	130	86	17	10
	{ Mouth and Tonsil ..	595	—	1	3	—	5	13	38	72	97	121	110	66	38	24	7
	{ Jaw	493	1	3	4	4	8	10	29	49	75	90	82	72	47	14	5
	Total	2482	1	4	9	5	18	54	154	276	411	462	425	327	216	78	42
44	{ Pharynx	267	—	—	1	—	3	8	24	35	61	52	37	29	7	7	3
	{ Oesophagus	1,442	—	—	—	3	11	27	90	201	262	271	263	184	91	29	10
	{ Stomach	4,426	—	—	4	61	85	176	332	492	664	763	768	578	340	125	38
	{ Liver and gall bladder ..	1,791	4	3	5	19	22	41	110	157	246	322	362	260	163	63	14
	Total	7926	4	3	10	83	121	252	556	885	1233	1408	1430	1051	601	224	65
45	{ Mesentery and peri- toneum	126	2	1	6	9	5	12	8	14	14	20	14	10	6	4	1
	{ Intestines	2,360	1	4	12	28	43	78	135	194	291	381	414	400	249	100	30
	{ Rectum	2,197	—	—	4	36	34	59	124	200	281	400	390	344	193	104	28
	Total	4683	3	5	22	73	82	149	267	408	586	801	818	754	448	208	59
47	Breast	33	—	1	—	1	—	—	2	1	2	6	7	2	6	4	1
48	{ Penis and scrotum ..	178	—	—	—	1	2	5	10	24	22	19	37	25	17	13	3
	{ Other skin	541	1	2	—	7	7	12	22	33	47	76	72	76	94	60	32
	Total	719	1	2	—	8	9	17	32	57	69	95	109	101	111	73	35
49	{ Larynx	641	1	—	—	1	10	16	38	102	110	111	120	71	43	11	7
	{ Lung and pleura ..	361	—	1	5	11	18	35	49	58	55	51	41	21	12	4	—
	{ Pancreas	438	—	—	1	13	11	19	31	54	72	78	64	55	28	9	3
	{ Kidneys and suprarenal glands	204	25	6	2	3	7	10	15	27	27	30	25	11	13	2	1
	{ Bladder	589	—	—	1	2	6	15	23	42	71	85	135	99	76	23	11
	{ Prostate	756	—	—	—	—	1	4	14	27	77	99	180	171	119	45	19
	{ Testes	114	1	1	9	24	11	18	10	5	7	9	4	6	6	3	—
	{ Brain	52	3	5	3	4	5	9	9	8	4	—	2	—	—	—	—
	{ Bones (jaw excepted) ..	348	3	17	42	27	14	11	37	26	48	36	40	19	21	6	1
	{ Other specified organs ..	688	7	8	17	21	26	27	59	97	119	93	111	52	39	8	4
	{ Abdominal cavity, organ unspecified	129	2	—	1	3	3	2	7	7	14	26	13	23	18	7	3
	{ Other and undefined ..	486	2	2	6	3	7	19	36	70	85	73	76	53	34	14	6
	Total	4806	44	40	87	112	119	185	328	523	689	691	811	581	409	132	55

Table XXXVII.—England and Wales, 1921—Sites of Fatal Cancer—*cont.*

		All Ages.	0-	5-	15-	25-	35-	40-	45-	50-	55-	60-	65-	70-	75-	80-	85-
		FEMALES.															
	All Sites	25,373	46	38	104	500	774	1,407	2,185	2,818	3,191	3,522	3,650	3,088	2,321	1,176	553
43	Lip	26	—	—	—	—	—	—	1	—	3	3	3	6	6	4	—
	Tongue	96	—	—	—	2	4	4	7	7	11	13	13	9	16	6	4
	Mouth and Tonsil ..	81	—	—	1	2	3	1	7	9	13	9	8	15	5	6	2
	Jaw	155	2	—	3	3	8	5	19	17	17	17	27	15	10	7	5
	Total	358	2	—	4	7	15	10	34	33	44	42	51	45	37	23	11
44	Pharynx	73	1	—	—	1	5	5	11	10	10	16	6	7	1	—	—
	Esophagus	465	—	—	—	7	17	27	54	70	58	66	50	48	46	15	7
	Stomach	3,709	1	—	5	40	65	111	196	368	434	571	660	563	428	199	68
	Liver and gall bladder..	2,571	—	4	4	24	27	47	129	197	321	409	485	404	298	159	63
	Total	6818	2	4	9	72	114	190	390	645	823	1062	1201	1022	773	373	138
45	Mesentery and peri- toneum	232	4	1	2	8	12	19	20	26	35	38	27	19	14	7	—
	Intestines	3,178	1	1	5	48	56	95	178	269	356	434	554	491	402	203	85
	Rectum	1,649	—	—	5	32	36	73	109	157	175	245	276	238	177	96	30
	Total	5059	5	2	12	88	104	187	307	452	566	717	857	748	593	306	115
46	Ovary and Fallopian tube	734	1	3	15	42	40	65	121	111	113	84	65	42	19	11	2
	Uterus	4,397	—	1	4	124	214	392	576	685	593	605	482	381	222	87	31
	Vagina and vulva ..	305	—	1	1	4	9	14	20	28	34	49	49	35	29	18	14
	Total	5436	1	5	20	170	263	471	717	824	740	738	596	458	270	116	47
47	Breast	4,684	—	—	2	70	176	393	547	575	668	575	509	458	361	204	146
48	Skin	401	1	1	3	9	11	8	16	23	38	39	37	57	57	53	48
49	Larynx	138	—	—	—	3	8	11	19	19	28	21	16	6	2	4	1
	Lung and pleura ..	186	—	2	3	7	7	16	15	30	29	35	17	12	8	2	3
	Pancreas	400	—	—	1	4	6	14	23	31	56	68	68	62	41	20	6
	Kidneys and suprarenal glands	206	15	5	4	8	5	15	16	18	23	23	30	14	20	6	4
	Bladder	286	—	—	1	2	9	7	11	20	36	40	59	40	34	19	8
	Brain	44	1	2	3	7	2	8	8	3	4	2	2	—	2	—	—
	Bones (jaw excepted) ..	337	9	7	21	19	15	30	22	34	25	37	44	38	21	12	3
	Other specified organs..	490	6	8	14	22	24	29	32	58	45	58	74	52	44	17	7
	Abdominal cavity, organ unspecified ..	281	1	1	3	2	7	6	9	23	29	35	59	51	38	11	6
	Other and undefined ..	249	3	1	4	10	8	12	19	30	37	30	30	25	20	10	10
	Total	2617	35	26	54	84	91	148	174	266	312	349	399	300	230	101	48

of the increasing age of the population, is not peculiar to English experience, attention being drawn to it in, for instance, recent returns for New Zealand.

The parts of the body affected by fatal cancer in 1921 are shown in Table XXXVII in greater detail than that provided by the international classification, six out of its seven headings (Nos. 43-49) relating to cancer being sub-divided according to a scheme approved by the Director of the Cancer Research Fund.

The tables, other than XXXVII, which have appeared in the Report for each year 1911-20, are omitted on this occasion in favour of Tables XXXVIII and XXXIX, in which the mortality of the ten years 1911-20 is dealt with in greater detail than has been given for the separate years composing the decennium. It is proposed to resume at a later date the tabulation now omitted in the form of tables dealing with the returns for several years jointly.

Table XXXVIII.—England and Wales.—Deaths of Males from

				All Ages.	0—	5—	10—	15—	20—	25—	30—	35—	40—
39 (43)	{	Lip	2,361	—	—	—	1	—	—	—	4	14	29
		Tongue	10,114	1	—	—	—	3	3	32	88	410	
		Mouth and Tonsil*	4,640	6	8	10	11	11	8	28	60	181	
		Jaw	4,946	15	12	13	16	20	22	48	76	179	
	Total		22,061	22	20	23	28	34	33	112	238	799	
40 (44)	{	Pharynx	2,150	2	5	6	17	9	8	14	28	78	
		Œsophagus	12,059	1	—	—	3	2	11	27	80	375	
		Stomach	36,833	1	2	3	9	32	136	363	787	1,631	
		Liver and Gall Bladder*	18,236	45	11	11	22	40	66	140	299	593	
Total		69,278	49	18	20	51	83	221	544	1,194	2,677		
41 (45)	{	Mesentery	194	2	—	2	2	4	5	17	10	13	
		Omentum	358	1	—	1	2	2	6	5	10	19	
		Peritoneum	623	18	5	1	8	17	19	23	32	48	
		Small Intestine	924	4	1	1	2	4	10	21	32	54	
		Cæcum	1,191	3	2	—	5	4	8	17	48	60	
		Hepatic Flexure	123	—	—	—	—	2	2	4	3	4	
		Splenic Flexure	277	—	—	—	—	3	2	1	10	18	
		Sigmoid Flexure	2,488	—	—	1	4	8	12	20	52	88	
		Colon (part unstated)	6,847	1	5	4	7	13	28	73	152	283	
		Intestine (part unstated)	7,053	6	7	2	15	18	32	70	122	217	
		Rectum and Anus	18,297	4	1	2	15	68	117	178	329	620	
Total		38,375	39	21	14	60	143	241	429	800	1,424		
43 (47)	Breast		302	1	—	—	—	1	1	—	8	12	
44 (48)	{	Rodent Ulcer	1,235	1	1	—	1	1	7	4	15	19	
		Other { Face	1,378	4	1	5	2	6	10	8	22	46	
		Nose	131	1	—	—	1	1	—	1	1	2	
		Skin { Scalp	86	1	—	1	—	1	—	1	2	5	
		Ear	379	1	—	2	—	—	—	3	5	4	
		Cancer { Penis, Scrotum	1,749	—	—	—	—	—	14	22	40	82	
		Other parts	1,339	4	—	3	4	5	13	18	27	57	
Total		6,297	12	2	11	8	14	44	57	112	215		
45 (49)	{	Larynx	4,780	2	1	—	—	6	10	17	47	190	
		Trachea	69	—	—	—	1	—	—	—	2	3	
		Lung	2,505	6	11	16	28	46	48	102	138	182	
		Pleura	134	—	—	—	3	3	1	3	8	9	
		Heart and Pericardium	16	—	—	1	—	1	3	1	1	1	
		Parotid	636	6	6	4	4	4	—	3	7	20	
		Thyroid	345	3	1	2	3	3	2	7	8	19	
		Pancreas	3,291	3	3	1	5	10	30	56	100	161	
		Spleen	235	7	2	3	1	1	4	3	13	19	
		Kidney, Suprarenal	1,760	202	52	16	14	17	27	31	67	98	
		Bladder	5,476	12	4	4	6	7	18	19	75	142	
		Urethra	28	—	—	—	—	—	—	—	—	—	
		Prostate	5,077	4	5	1	2	7	5	9	10	30	
		Testes	928	22	3	2	19	56	77	126	110	90	
		Brain	624	27	26	25	25	25	50	54	55	63	
		Spinal Cord	88	1	—	1	3	2	4	7	3	3	
		Globe of Eye, Orbit	396	59	17	4	8	2	8	6	11	19	
		Lymphatic Glands	2,253	38	31	42	70	82	67	67	105	160	
		Bones {	Skull	263	21	6	7	5	8	11	9	10	16
			Spinal Column	403	1	1	4	13	12	14	13	18	28
			Rib, Sternum, Clavicle	422	5	1	6	10	21	12	12	20	23
			Pelvis	598	14	9	17	15	31	28	22	27	36
			Arm	274	8	9	5	14	11	11	10	10	17
			Leg	981	19	25	53	103	91	46	34	40	56
		Undefined	Undefined	42	2	1	—	6	—	—	2	2	3
			Neck	2,685	3	1	2	8	9	10	17	32	99
		Throat	428	—	—	1	—	—	—	1	4	17	
		Axilla	106	1	1	—	1	—	—	1	1	1	
		Mediastinum	1,813	3	6	22	21	23	33	56	85	156	
		Thorax	136	1	—	—	2	1	2	2	7	10	
		Pelvic Cavity	161	2	—	—	2	1	5	2	8	8	
		Abdomen	1,006	12	8	5	12	12	16	15	27	52	
		Groin	195	—	—	—	—	1	—	7	4	14	
		Other Localities	778	7	5	7	14	20	23	31	40	41	
		Multiple	290	11	7	3	8	6	11	13	16	22	
		Undefined	336	6	2	—	5	8	6	4	8	17	
Total		39,558	508	244	254	431	527	582	762	1,119	1,825		
All Sites		175,871	631	305	322	578	802	1,122	1,904	3,471	6,952		

* The figures for the mouth, tonsil, liver, and gall

Mouth	2,483	1	4	1	1	—	3	11	27	82
Tonsil	1,384	3	2	6	7	9	4	14	18	65
Liver	13,854	36	6	8	16	34	53	112	218	457
Gall bladder	946	1	1	1	—	—	3	5	13	26

Cancer, 1911-20, classified by Age and Site of Growth.

45-	50-	55-	60-	65-	70-	75-	80-	85-		
70	136	222	283	352	425	416	246	163	Lip	39 (43)
875	1,524	1,780	1,774	1,613	1,107	582	263	59	Tongue	
388	624	788	820	727	491	288	141	52	Mouth and Tonsil	
381	631	750	835	838	569	347	132	62	Jaw	
1,714	2,915	3,540	3,712	3,530	2,592	1,631	782	336	Total	
199	293	416	337	321	243	117	38	19	Pharynx	40 (44)
972	1,680	2,146	2,278	2,058	1,355	723	284	64	Œsophagus	
2,803	4,065	5,309	6,437	6,441	4,953	2,710	910	241	Stomach	
1,141	1,827	2,467	3,119	3,249	2,716	1,658	656	176	Liver and Gall Bladder	
5,115	7,865	10,338	12,171	12,069	9,267	5,208	1,888	500	Total	
14	22	20	19	31	20	9	2	2	Mesentery	41 (45)
25	41	42	60	59	49	23	9	4	Omentum	
56	67	83	94	67	50	28	4	3	Peritoneum	
70	106	114	137	140	127	75	21	5	Small Intestine	
88	115	150	183	206	153	92	43	14	Cæcum	
5	16	18	15	25	14	13	1	1	Hepatic Flexure	
21	40	40	43	37	35	22	5	—	Splenic Flexure	
160	257	310	418	435	358	236	98	31	Sigmoid Flexure	
429	599	875	1,136	1,218	1,045	648	253	78	Colon (part unstated)	
384	587	843	1,162	1,320	1,148	755	283	82	Intestine (part unstated)	
1,026	1,718	2,487	3,091	3,256	2,799	1,729	649	208	Rectum and Anus	
2,278	3,568	4,982	6,358	6,794	5,798	3,630	1,368	428	Total	
18	42	39	37	52	30	30	24	7	Breast	43 (47)
35	44	89	132	161	204	246	152	123	Rodent Ulcer	44 (48)
64	106	144	154	195	214	187	128	82	Face	
5	10	15	13	16	17	18	17	13	Nose	
4	8	6	9	9	20	11	6	2	Scalp	
7	12	15	34	44	65	85	57	45	Ear	
116	185	255	278	228	228	182	75	44	Penis, Scrotum	
84	105	138	160	148	175	194	136	68	Other Parts	
315	470	662	780	801	923	923	571	377	Total	
444	704	836	887	768	506	264	79	19	Larynx	45 (49)
6	11	8	21	10	5	2	—	—	Trachea	
267	347	387	360	310	167	67	19	4	Lung	
11	19	15	27	17	11	6	—	1	Pleura	
—	3	1	1	2	1	—	—	—	Heart and Pericardium	
49	76	90	114	105	82	39	20	7	Parotid	
32	47	55	55	48	32	21	4	3	Thyroid	
283	401	504	589	511	343	212	63	16	Pancreas	
24	27	28	32	29	21	13	5	3	Spleen	
157	217	208	244	177	132	75	19	7	Kidney, Suprarenal	
253	439	623	938	1,080	949	581	236	90	Bladder	
1	7	2	8	5	4	—	1	—	Urethra	
87	224	437	818	1,135	1,108	807	301	87	Prostate	
85	61	50	56	57	45	38	25	6	Testes	
71	68	56	37	22	12	6	2	—	Brain	
5	10	13	15	13	3	5	—	—	Spinal Cord	
22	37	29	50	39	39	26	14	6	Globe of Eye, Orbit	
229	296	337	282	214	127	77	20	9	Lymphatic Glands	
21	27	41	28	24	11	13	4	1	Skull	
39	60	62	50	40	33	8	6	1	Spinal Column	
33	39	45	60	65	33	26	8	3	Rib, Sternum, Clavicle	
53	43	81	83	71	34	28	6	—	Pelvis	
19	29	28	21	29	21	21	8	3	Arm	
52	66	67	91	98	71	39	25	5	Leg	
5	6	2	1	4	3	2	2	1	Undefined	
238	392	451	447	417	307	158	66	28	Neck	
39	47	68	83	83	53	21	9	2	Throat	
5	6	8	21	9	23	21	4	3	Axilla	
185	229	286	276	223	129	61	14	5	Mediastinum	
9	23	18	25	15	13	6	2	—	Thorax	
10	11	31	26	20	19	12	3	1	Pelvic Cavity	
51	74	114	145	169	149	97	41	7	Abdomen	
13	33	26	28	24	20	18	5	2	Groin	
71	70	85	109	83	83	50	32	7	Other Localities	
27	22	40	43	28	22	8	2	1	Multiple	
32	33	45	50	50	40	19	8	3	Undefined	
2,928	4,204	5,177	6,121	5,994	4,651	2,847	1,053	331	Total	
12,368	19,064	24,738	29,179	29,240	23,261	14,269	5,686	1,979	All Sites	

bladder for the 8 years 1913-20 are as follows:—

196	338	414	443	400	277	162	90	33	Mouth
129	185	245	251	212	123	70	31	10	Tonsil
864	1,424	1,877	2,390	2,446	2,048	1,252	486	127	Liver
53	90	105	153	172	168	100	41	14	Gall bladder

Table XXXIX.—England and Wales.—Deaths of Females from

		All Ages.	0-	5-	10-	15-	20-	25-	30-	35-	40-
39 (43)	Lip	180	—	—	—	—	—	1	1	2	22
	Tongue	1,009	—	—	—	—	4	6	28	48	55
	Mouth and Tonsil*	712	2	5	4	3	7	9	14	26	29
	Jaw	1,658	15	16	14	12	23	19	37	57	100
	Total	3,559	17	21	18	15	34	35	80	133	186
40 (44)	Pharynx	674	2	6	2	8	8	12	16	41	61
	Œsophagus	3,850	—	—	—	1	3	23	66	196	315
	Stomach	32,927	2	3	—	9	31	114	342	777	1,278
	Liver and Gall Bladder*	26,060	41	17	10	17	20	69	163	372	795
	Total	63,511	45	26	12	35	62	218	587	1,386	2,449
41 (45)	Mesentery	380	2	1	1	1	1	5	6	14	29
	Omentum	969	—	—	1	2	1	2	9	23	37
	Peritoneum	1,457	9	6	6	7	13	21	33	61	99
	Small Intestine	904	2	2	1	2	6	5	10	19	39
	Cæcum	1,990	—	1	—	1	5	13	19	25	63
	Hepatic Flexure	167	—	—	—	—	—	—	2	3	3
	Splenic Flexure	299	—	—	—	—	—	2	6	13	19
	Sigmoid Flexure	2,940	—	—	—	1	6	26	40	62	125
	Colon (part unstated)	9,287	—	—	2	6	16	52	116	200	324
	Intestine (part unstated)	10,387	8	3	3	6	19	36	103	182	358
	Rectum and Anus	14,007	3	—	2	12	47	112	220	381	621
Total		42,787	24	13	16	38	114	274	564	983	1,717
42 (46)	Ovary and Fallopian Tube	5,493	8	10	19	47	67	120	191	313	558
	Uterus	40,175	1	—	1	14	47	253	897	2,171	3,948
	Vagina, Vulva	2,807	9	1	1	4	6	16	39	63	114
Total		48,475	18	11	21	65	120	389	1,127	2,547	4,620
43 (47)	Breast	39,930	—	—	1	4	14	114	600	1,783	3,303
44 (48)	Rodent Ulcer	1,083	2	—	1	1	1	—	4	7	13
	Other { Face	935	8	—	1	2	7	7	9	14	26
	{ Nose	119	—	—	—	—	—	1	—	—	2
	{ Skin	171	1	—	—	—	2	2	2	—	5
	{ Scalp	107	1	1	—	—	2	—	2	—	5
	{ Ear	107	1	1	—	—	2	—	2	—	5
Total		3,694	17	2	4	4	22	22	35	56	92
45 (49)	Larynx	1,359	—	—	—	—	3	18	56	96	132
	Trachea	25	—	—	—	—	—	1	1	4	5
	Lung	1,593	4	5	11	23	28	22	42	92	120
	Pleura	100	—	—	—	1	2	—	1	4	9
	Heart and Pericardium	8	—	—	—	—	—	—	—	2	—
	Parotid	293	5	2	1	7	2	2	7	7	16
	Thyroid	989	1	—	1	2	5	9	14	31	52
	Pancreas	3,065	—	1	—	6	10	22	28	68	137
	Spleen	316	11	4	—	2	4	3	8	8	18
	Kidney, Suprarenal	1,565	175	51	18	14	5	22	34	52	87
	Bladder	2,311	7	2	3	1	—	3	13	44	62
	Urethra	54	—	1	—	—	—	—	1	1	2
	Brain	557	23	14	11	23	26	33	39	66	54
	Spinal Cord	82	2	—	1	4	1	3	4	4	8
	Globe of Eye, Orbit	352	53	8	4	6	7	2	8	6	15
	Lymphatic Glands	1,030	30	18	16	45	40	46	51	76	77
	{ Skull	223	17	8	6	5	6	7	6	9	11
	{ Spinal Column	407	3	1	7	3	11	8	9	22	31
	Bones (not jaw) { Rib, Sternum, Clavicle	315	6	1	9	7	15	12	13	14	13
	{ Pelvis	528	14	7	10	30	25	25	24	20	29
	{ Arm	209	5	2	5	15	11	6	6	3	6
	{ Leg	950	10	11	59	92	41	19	37	31	46
	{ Undefined	26	—	2	2	—	—	—	1	1	4
	Neck	658	1	1	1	3	6	3	14	13	37
	Throat	101	—	1	—	—	—	—	1	10	8
	Axilla	167	—	—	—	—	1	1	1	2	7
	Mediastinum	1,037	2	7	7	7	15	16	23	43	89
	Thorax	112	1	—	—	—	1	—	—	4	7
	Pelvic cavity	493	5	1	—	4	—	7	7	16	31
	Abdomen	2,015	12	5	3	2	8	13	20	46	87
	Groin	195	—	—	—	—	—	1	3	4	7
	Other Localities	615	10	3	4	10	17	10	9	24	41
	Multiple	395	8	1	4	4	7	9	22	33	40
	Undefined	402	4	—	2	1	—	2	13	14	21
Total		22,547	409	157	185	317	297	325	516	870	1,309
All Sites		224,503	530	230	257	478	663	1,377	3,509	7,758	13,676

* The figures for the mouth, tonsil, liver, and gall

Mouth	325	1	1	1	—	1	2	3	11	11
Tonsil	255	1	4	3	2	3	5	6	9	10
Liver	18,640	33	12	9	15	12	56	109	274	582
Gall bladder	2,292	—	—	—	—	1	1	7	26	54

Cancer, 1911-20, classified by Age and Site of Growth.

45-	50-	55-	60-	65-	70-	75-	80-	85-		
5	16	13	13	21	24	36	21	25	Lip	} 39 (43)
79	107	127	126	138	121	87	54	29	Tongue	
64	66	105	76	79	91	75	41	16	Mouth and Tonsil	
123	179	207	221	214	191	148	56	26	Jaw	
271	368	452	436	452	427	346	172	96	Total	
88	88	87	103	42	48	38	16	8	Pharynx	} 40 (44)
415	464	470	507	464	414	282	164	66	Esophagus	
2,142	3,133	4,114	5,123	5,593	5,068	3,324	1,355	519	Stomach	
1,424	2,338	3,249	4,250	4,640	4,179	2,832	1,197	447	Liver and Gall Bladder	
4,069	6,023	7,920	9,983	10,739	9,709	6,476	2,732	1,040	Total	
40	34	44	42	52	56	25	19	8	Mesentery	} 41 (45)
80	95	144	148	154	117	94	44	18	Omentum	
143	184	207	206	198	119	98	35	12	Peritoneum	
65	85	103	123	154	139	90	41	18	Small Intestine	
115	173	201	294	329	337	253	112	49	Cæcum	
9	10	21	28	28	30	23	7	3	Hepatic Flexure	
23	31	32	52	41	35	29	12	4	Splenic Flexure	
205	280	354	423	464	459	296	147	52	Sigmoid Flexure	
525	851	1,073	1,312	1,525	1,512	1,047	508	218	Colon (part unstated)	
559	874	1,238	1,474	1,729	1,720	1,241	601	233	Intestine (part unstated)	
948	1,362	1,648	2,006	2,185	2,131	1,419	625	285	Rectum and Anus	
2,712	3,979	5,065	6,108	6,859	6,655	4,615	2,151	900	Total	
761	855	812	631	492	337	183	72	17	Ovary and Fallopian Tube	} 42 (46)
5,447	6,166	5,932	5,197	4,287	3,030	1,854	671	259	Uterus	
192	220	306	374	437	403	334	205	83	Vagina, Vulva	
6,400	7,241	7,050	6,202	5,216	3,770	2,371	948	359	Total	
4,898	5,301	5,260	4,810	4,284	3,985	2,925	1,652	996	Breast	43 (47)
30	40	60	89	120	179	205	187	144	Rodent Ulcer	} 44 (48)
46	47	61	89	102	159	162	124	71	Face	
1	3	8	14	20	23	20	13	13	Other { Nose	
1	9	12	18	22	25	37	16	19	Skin { Scalp	
7	5	18	14	10	12	20	9	1	Cancer { Ear	
63	83	118	136	155	193	177	138	92	Other Parts	
148	187	277	360	429	591	621	487	340	Total	
221	183	181	165	119	84	61	32	8	Larynx	} 45 (49)
1	5	—	5	2	1	—	—	—	Trachea	
176	208	230	214	182	144	63	22	7	Lung	
10	14	14	14	10	12	7	2	—	Pleura	
1	4	1	—	—	—	—	—	—	Heart and Pericardium	
21	28	29	32	46	34	25	18	11	Parotid	
80	102	128	156	151	140	84	26	7	Thyroid	
205	336	421	524	482	431	270	89	35	Pancreas	
26	40	31	50	40	42	16	9	4	Spleen	
120	145	160	228	169	143	96	33	13	Kidney, Suprarenal	
126	183	260	346	379	397	290	134	61	Bladder	
5	4	3	15	11	5	4	—	2	Urethra	
56	70	55	31	26	17	9	3	1	Brain	
10	9	7	9	10	3	7	—	—	Spinal Cord	
25	25	26	31	39	34	33	17	13	Globe of Eye, Orbit	
89	109	83	112	81	74	42	27	14	Lymphatic Glands	
17	16	20	23	18	24	22	7	1	Skull	
56	53	57	51	30	38	20	7	—	Spinal Column	
16	31	29	30	30	42	23	13	11	Bones { Rib, Sternum, Clavicle	
47	49	59	66	49	31	25	16	2	(not jaw) { Pelvis	
15	22	21	22	24	19	17	6	4	Arm	
49	83	95	80	94	86	69	29	19	Leg	
2	—	5	—	3	1	3	2	—	Undefined	
49	60	67	96	81	88	69	35	34	Neck	
6	18	11	10	78	8	13	5	2	Throat	
14	16	10	23	32	23	16	11	10	Axilla	
91	146	136	157	131	88	54	18	7	Mediastinum	
10	14	21	13	14	15	9	3	—	Thorax	
42	54	73	68	75	52	33	17	8	Pelvic Cavity	
118	187	242	280	308	312	222	98	52	Abdomen	
14	16	25	30	43	16	21	10	5	Groin	
49	61	67	67	53	79	61	32	18	Other Localities	
45	42	46	41	40	27	19	6	1	Multiple	
44	43	48	67	53	39	30	13	8	Undefined	
1,856	2,376	2,661	3,056	2,833	2,549	1,733	740	358	Total	
20,354	25,475	28,685	30,955	30,812	27,686	19,087	8,882	4,089	All Sites	

bladder for the 8 years 1913-20 are as follows:—

24	31	43	39	41	49	37	21	9	Mouth
28	24	46	22	21	31	24	11	5	Tonsil
1,010	1,637	2,292	3,033	3,279	3,018	2,071	871	327	Liver
125	215	307	362	447	344	250	111	42	Gall Bladder

As the estimates of population at risk in the several age groups during the ten years will shortly require revision in the light of the results of the 1921 Census, the numbers of deaths alone are recorded here, leaving mortalities to be dealt with in a future issue, and comment must for the most part be deferred till these are available.

Amongst other of the rarer sites of cancer now separately distinguished for the first time in these returns may be noted the gall-bladder, disease of which caused 3238 deaths during the eight years 1913–1920. The great excess of this form of cancer in females will be noted, associated as it doubtless is with their greater proclivity to gall stones.

The details given for cancer of the intestines and peritoneum show that while the rare instances of disease distinguished as of the small intestine occur with more or less equal frequency in both sexes, the much more numerous deaths from disease of the large intestine occur chiefly amongst women; while almost three times as many women as men die from growths in the peritoneum, including the mesentery and omentum. Growths of the large intestine, where their exact site is specified, occur most frequently in the sigmoid flexure, and after that in the cæcum, the hepatic and splenic flexures being rarely involved. The excess for females is highest in the case of the cæcum.

A contrast of some interest is provided by cancer of the scalp, which is twice as common in females, and of the external ear, which is over three times as common in males as in the opposite sex.

The tonsil, larynx and trachea are seen to share in the great excess mortality of males from growths in the mouth, pharynx and œsophagus, which applies even to such an annex of the mouth as the parotid gland. On the other hand, cancer of the thyroid gland, like other diseases of the same organ, is very much commoner amongst women.

Although cancer of the bladder is more than twice as common in the male sex the rare instances of cancer of the urethra are twice as frequent in females. Cancer of the lymphatic glands (almost entirely sarcoma, *see* Report for 1913, page 582) is more than twice as frequent in males as females, but cancer of the bones, also almost entirely sarcoma, kills almost as many females as males. In common with other sites in which sarcoma is frequent, such as the kidney and the mediastinum, cancer of both bones and lymphatic glands finds a considerable proportion of its victims in early life, though the largest numbers of deaths are returned at about 55–70, as with other forms of cancer. But cancer of the leg bones presents a very marked peculiarity, shared to a much less extent by other bone cancers, in the shape of two age maxima, one at 15–20, and the other at the usual age of about 60. This applies to both sexes. As these deaths are almost entirely due to sarcoma (there was one death from carcinoma

of the leg bones in 1912, and 143 from sarcoma) it would appear that two varieties of the disease may be concerned, one attacking adolescents especially, and the other persons of mature age. No records of the varieties of sarcoma concerned are available to throw any light on this point. What does come out clearly from the returns is their discrepancy with the usual teaching that sarcoma mainly affects the young. Thus one well known text book of pathology states that "sarcoma, although it may occur at any age, is particularly prevalent in childhood and young adult life."

Certain other points of some interest in regard to age distribution may be noted. As is well known, cancer of the lip occurs particularly late in life, and this is seen to apply also to rodent ulcer and cancer of the skin generally, except so far as the scrotum and penis are concerned. On the other hand cancer of the female genital organs, including the breast, occurs at rather below the average age, deaths being most numerous at 50-55 instead of, as with cancer of other sites in females, and of all sites in males, in the aggregate, at 65-70. The still earlier incidence of mortality from cancer of the testis (maximum number of deaths at 30-35) may be partly due to the fact that many of the growths in this case are sarcomata, but even so the maximum is much earlier than that for sarcomata generally. And the more complete analysis available for 1912 shows that in that year the exceptionally early age incidence of mortality from testicular cancer was common to carcinoma and sarcoma. Of 19 deaths returned as due to carcinoma, 7 were at 25-35, 1 at 35-45, 5 at 45-55, and only 6 at later ages. The maxima for sarcoma and for "cancer" (undefined) were also at 25-35. Another organ yielding an exceptionally early maximum (50-55, taking the sexes together) is the brain, but in this case hardly any carcinomata are returned.

The marital condition of females dying from cancer of the genital organs is shown in Table XL, the balance in each case being of unstated condition.

In order the better to bring out the remarkable variations with marital condition in mortality from cancer of these organs the proportion, at each age, of deaths of married and widowed to those of unmarried women is recorded for each of the four sites dealt with; and in order to provide an indication of the normal proportion at each age similar ratios are stated for deaths from all causes during the decennium.

The differences revealed are, however, best measured by the section of the table comparing the excess of deaths of married and widowed women from cancer of each site with the corresponding excess for mortality from all causes, as the increase of the latter with advancing age continues without a break up to 75-80.

The comparisons for all ages jointly are most misleading, owing to the different weights appropriate to total mortality and to that from cancer. This is most clearly seen in the case of the

Table XL.—England and Wales.—Deaths of Single and of Married and Widowed Females during 1911–20 from Cancer of the Genital Organs.

Age.	Single.					Married and Widowed.				
	Ovary and Fallopian tube.	Uterus.	Vagina, Vulva.	Breast.	All Causes of Death.	Ovary and Fallopian tube.	Uterus.	Vagina, Vulva.	Breast.	All Causes of Death.
0-	84	15	14	5	729,407	—	1	1	—	1,339
20-	51	23	3	11	45,345	16	24	3	3	18,756
25-	48	54	5	41	29,293	72	197	11	73	43,814
30-	68	96	13	148	20,447	122	794	26	450	56,048
35-	87	168	21	386	17,405	226	1,995	42	1,393	66,603
40-	161	306	28	685	16,950	393	3,632	85	2,605	73,360
45-	228	453	32	1,037	18,225	530	4,972	158	3,845	84,229
50-	208	519	38	1,144	19,001	641	5,620	181	4,130	99,025
55-	202	574	44	1,088	19,572	603	5,340	262	4,161	114,018
60-	157	460	61	960	21,225	471	4,722	313	3,834	138,060
65-	97	371	70	841	23,571	394	3,899	365	3,423	164,696
70-	83	273	55	753	26,498	252	2,739	344	3,205	193,456
75-	44	200	42	495	24,793	138	1,648	291	2,421	181,536
80-	12	78	28	301	17,998	60	590	177	1,339	128,538
85-	2	33	11	185	14,387	14	226	72	805	95,946
All ages over 20	1,448	3,608	451	8,075	314,710	3,935	36,398	2,330	31,687	1,458,085

Relative Excess of Deaths of Married and Widowed.										
Deaths of Married and Widowed per 100 Deaths of Single Women.						Relative Excess for each Organ per cent. of that for Deaths from all Causes.				
20-	31	104	—	—	41	76	254	—	—	100
25-	150	365	—	178	150	100	243	—	119	100
30-	179	827	200	304	274	65	302	73	111	100
35-	260	1,188	200	361	383	68	310	52	94	100
40-	244	1,187	304	380	433	56	274	70	88	100
45-	232	1,098	494	371	462	50	238	107	80	100
50-	308	1,083	476	361	521	59	208	91	69	100
55-	300	930	595	382	583	51	160	102	66	100
60-	300	1,027	513	399	650	46	158	79	61	100
65-	406	1,051	521	407	699	58	150	75	58	100
70-	304	1,003	625	426	730	42	137	86	58	100
75-	314	824	693	489	732	43	113	95	67	100
80-	500	756	632	445	714	70	106	89	62	100
85-	—	685	655	435	667	—	103	98	65	100
All ages over 20	272	1,009	517	392	463	59	218	112	85	100

vagina and vulva, where, although the rates for separate ages plainly indicate some excess of mortality for single women, yet the total deaths, occurring mainly in later life, when the normal excess for the married and widowed is greatest, are in greater excess for the married and widowed than deaths from all causes. The same tendency must operate in other cases also, so that a properly weighted comparison would reduce all the ratios given in the final section of the table for all ages jointly. These ratios must, therefore, be disregarded, and until standardized death-rates are available the comparisons made cannot conveniently be summed up in a single figure.

It was shown in the Report for 1913 that for the three years 1911–13 the standardized death-rate of single women from ovarian cancer was approximately double that of the married and widowed, and that their death-rate from breast cancer was 45 per cent. in excess of that for those who had been married; but that the mortality of the latter from cancer of the uterus

was 73 per cent. in excess of that of the single. Such a comparison of death-rates cannot be repeated until tabulation of ages at the 1921 Census is completed, but it will be seen that the above statement of the deaths for the complete decennium fully confirms these results. The general truth of this statement is obvious from the facts as stated in Table XL, but the remarkable precision of the correspondence between the two periods is best brought out by the following comparison of deaths of married and widowed per 100 deaths of single women during 1911-13 with the ratios stated for 1911-20 in Table XL.

		<i>Ovary.</i>		<i>Uterus.</i>		<i>Breast.</i>
1911-13 ..	..	269	..	1,000	..	413
1911-20 ..	..	272	..	1,009	..	392

As these proportions have remained so constant it may be assumed that the standardized death-rates have also shown little relative change, so that their ratios as stated above for 1911-13 substantially apply to 1911-20. The extent of the influence exercised by marriage in each case requires no emphasis, and no doubt if it were possible to classify the deaths by number of children born instead of by marital condition still more striking contrasts might be brought out.

The comparison by ages, which can be made with greater confidence on the increased material now available, brings out some further points of interest. The excess mortality of the married from uterine cancer applies mainly to the reproductive period, and is present to its full extent from the very commencement of married life, each age group from 20-25 to 50-55 returning a proportion of married to single more than double the normal as measured by mortality from all causes. This excess reaches its maximum of 210 per cent. at 35-40, after which age it decreases with great steadiness, until in old age it has practically disappeared. The uterus is the only important seat of primary cancer mortality from which is not recorded as increasing, a fact easily explained, in view of these figures, by the reduction in size of families.

Cancer of the ovary and Fallopian tube shows as great a predilection for single women as uterine cancer for the married, but this is only gradually developed as the childbearing period passes by without use of its opportunities, and is not fully established till its close, the proportion of married to single women falling to 50 per cent. of normal first at 45-50, and remaining at about that proportion until the age of 80 is reached, after which the very small numbers of deaths returned can scarcely provide significant ratios.

The case is very similar with cancer of the breast. Here the excess in deaths of married and widowed women does not fall below the normal till after 35, thereby conforming to the experience of 1911-13 that mortality was in excess for the married at ages under 35. But after that age excess of deaths

for the married falls below normal to an extent gradually increasing to a maximum at 65–75, when it is only 58 per cent. of that for deaths from all causes. Here again the regularity of the change with advancing age is remarkable, though this case differs from that of the uterus in that the movement is one of increasing, not of decreasing, divergence from the normal ratio. In each case, however, it is the mortality of the single which increases relatively to that of the married with advancing age.

The deaths from cancer of the vagina and vulva show a deficiency in excess for the married and widowed (*i.e.* an excess mortality for the single) which is probably significant in view of its existence at 10 out of 12 age groups. This result seems surprising, as local injury in parturition might have been expected to have the same effect as in the case of the cervix, but the returns prove the contrary. Failure to function seems to predispose towards cancer as well as injury; and in this case, as well as with the breast and ovary, where the married are subject to little excess risk of injury, it appears to be the dominant factor. Where this is the case the excess mortality of the single only develops gradually, much time being evidently needed to produce the effect, whereas the excess mortality of the married ascribable to injury of the cervix uteri is fully established from the first, and gradually disappears with increase of the interval of time lapsed since the possibility of such injury.

50. Tumours not returned as malignant.—As a result of the revision of the International List in 1920 this title now includes all non-malignant tumours except those of the brain and of the female genital organs. It also includes about an equal number of growths of unstated nature, which cannot on the evidence given be classed either as benign or malignant. In order to secure a comprehensive presentation of all deaths attributed to tumours all those not returned as due to cancer are assembled in Table XLI, including mortality of this nature affecting the brain and female genital organs, but it is to be understood that, in accordance with international practice, the latter is excluded from the numbers shown under this head in Tables 4, 17 and 18.

Another exclusion from cause 50 which requires mention is that of adenomata of the prostate, which it has been decided to continue to class to disease of that organ. These are shown by Table XLI to be fatal only at ages 55 and upwards. From this and other circumstances it is believed that these deaths are indistinguishable from others returned as due to hypertrophy of the organ, and that the presence of a true tumour cannot be inferred from such a certificate. As the proportion of other deaths assigned to disease of the prostate occurring at ages over 55 is more than 98 per cent., there is not much room for doubt that in this case hypertrophy and adenoma have the same meaning; but as the verbal form of return is suggestive of new growth it has

Table XLI.—England and Wales, 1921 : Tumours not returned as Malignant.

Part affected.				All Ages.		0—		15—		35—		45—		55—		65—		75—	
				M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
<i>Tumours classed with other disease of organ affected.</i>																			
84.2. Cerebral tumour				521	509	75	51	98	116	103	93	114	128	85	73	44	35	2	13
Cholesteatoma				3	—	2	—	—	—	1	—	—	—	—	—	—	—	—	—
Cyst				15	7	3	—	6	4	4	1	1	1	1	1	—	—	—	—
Glioma				89	57	7	8	16	13	22	16	25	12	14	5	5	3	—	—
Other benign				6	8	—	—	1	2	1	1	4	—	—	5	—	—	—	—
Nature unstated				408	437	63	43	75	97	75	75	84	115	70	62	39	32	2	13
In 135. Prostate				115	—	—	—	—	—	—	—	—	—	25	—	50	—	40	—
Adenoma				105	—	—	—	—	—	—	—	—	—	22	—	47	—	36	—
Fibro-adenoma				9	—	—	—	—	—	—	—	—	—	2	—	3	—	4	—
Fibro-cystic-adenoma				1	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—
137. Ovarian tumour				—	297	—	3	—	46	—	35	—	42	—	64	—	60	—	47
Cyst				—	254	—	2	—	42	—	31	—	39	—	51	—	48	—	41
Cyst-adenoma				—	5	—	—	—	—	—	2	—	—	—	—	—	3	—	—
Papilloma				—	3	—	—	—	—	—	—	—	1	—	—	—	1	—	—
Other benign				—	7	—	1	—	—	—	—	—	—	—	5	—	—	—	1
Nature unstated				—	28	—	—	—	4	—	2	—	2	—	7	—	8	—	5
139. Uterine tumour				—	365	—	—	—	25	—	117	—	127	—	41	—	30	—	25
Fibroid				—	278	—	—	—	19	—	86	—	102	—	31	—	23	—	17
Fibro-myoma				—	39	—	—	—	1	—	15	—	13	—	2	—	4	—	4
Myoma				—	17	—	—	—	3	—	6	—	7	—	1	—	—	—	—
Polypus				—	10	—	—	—	1	—	5	—	3	—	—	—	—	—	1
Other benign				—	7	—	—	—	—	—	2	—	1	—	3	—	—	—	1
Nature unstated.. .. .				—	14	—	—	—	1	—	3	—	1	—	4	—	3	—	2
In 141.2 Other female genital organs ..				—	6	—	—	—	3	—	—	—	2	—	1	—	—	—	—
Broad ligament, Cyst				—	2	—	—	—	2	—	—	—	—	—	—	—	—	—	—
Dermoid cyst				—	2	—	—	—	1	—	—	—	1	—	1	—	—	—	—
Vagina, Polypus				—	1	—	—	—	—	—	—	—	1	—	—	—	—	—	—
Vulva, Papilloma				—	1	—	—	—	—	—	—	—	1	—	—	—	—	—	—
50. Tumours not classed with other disease of organ or part of body affected.																			
Pituitary gland .. Non-malignant				1	3	1	1	—	1	—	1	—	—	—	—	—	—	—	—
Nature unstated				7	5	1	—	4	3	—	—	2	1	—	—	—	1	—	—
Thyroid Adenoma ..				3	9	—	—	—	1	2	2	1	3	—	1	—	1	—	1
Other benign ..				1	3	—	—	—	—	—	—	—	1	—	1	—	1	—	—
Nature unstated				—	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Spinal cord .. Glioma ..				3	2	—	—	1	—	—	—	2	2	—	—	—	—	—	—
Other benign ..				2	4	—	—	—	1	—	—	1	1	1	2	—	—	—	—
Nature unstated				8	4	—	—	—	—	1	—	2	1	4	1	1	2	—	—
Eye Glioma ..				2	1	2	1	—	—	—	—	—	—	—	—	—	—	—	—
Other benign ..				—	1	—	1	—	—	—	—	—	—	—	—	—	—	—	—
Nature unstated				1	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—

Table XLI.—England and Wales, 1921: Tumours not returned as Malignant.—*continued.*

Part affected.	All Ages.		0—		15—		35—		45—		55—		65—		75—	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Nose Polypus.. ..	9	3	—	—	1	1	2	—	3	1	2	—	—	1	1	—
Larynx Papilloma ..	6	1	4	1	—	—	—	—	1	—	—	—	1	—	—	—
Nature unstated	2	1	—	—	—	—	—	—	1	—	1	—	—	1	—	—
Mediastinum .. Non-malignant	3	2	—	—	—	—	—	—	1	—	1	—	1	1	—	1
Nature unstated	61	27	—	—	4	1	7	3	17	8	16	7	14	5	3	3
Lung Non-malignant	1	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—
Nature unstated	18	5	—	—	1	—	4	—	8	3	2	2	3	—	—	—
Parotid Non-malignant	1	4	—	—	—	—	—	—	—	1	—	2	1	1	—	—
Nature unstated	—	2	—	—	—	—	—	—	—	—	—	—	—	—	—	2
Pharynx Fibroma ..	3	—	2	—	1	—	—	—	—	—	—	—	—	—	—	—
Nature unstated	3	2	—	—	1	—	—	—	1	1	—	—	1	—	—	1
Œsophagus .. Nature unstated	5	5	—	—	—	1	—	—	1	—	—	1	3	2	1	1
Intestine .. Non-malignant	3	6	1	—	1	—	—	2	—	1	1	2	—	1	—	—
Nature unstated	12	19	—	—	—	2	—	—	3	2	4	1	5	5	—	9
Liver Cyst	1	2	—	1	—	—	—	—	—	1	—	—	—	—	1	—
Other benign ..	1	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—
Nature unstated	4	11	—	2	—	1	—	—	1	2	—	—	1	3	2	3
Pancreas.. .. Cyst	5	9	—	—	2	1	1	2	1	2	—	1	—	3	1	—
Other benign ..	1	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—
Nature unstated	2	3	—	—	—	—	—	—	1	—	1	3	—	—	—	—
Kidney Cyst	1	4	—	—	—	1	—	—	1	2	—	—	—	1	—	—
Other benign ..	—	1	—	—	—	—	—	—	—	—	—	1	—	—	—	—
Nature unstated	5	8	1	—	1	1	—	1	1	4	2	1	—	—	—	1
Bladder Papilloma or villous ..	76	25	—	—	2	—	1	2	10	4	18	5	24	7	21	7
Polypus.. ..	1	3	—	—	—	—	—	—	—	—	—	1	—	2	1	—
Nature unstated	10	3	—	—	—	—	—	—	—	—	3	1	5	—	2	2
Prostate Non-malignant	2	—	—	—	—	—	—	—	—	—	1	—	1	—	—	—
Nature unstated	3	—	—	—	—	—	—	—	—	—	1	—	2	—	—	—
Breast Non-malignant	2	4	—	—	1	—	—	1	—	1	—	—	—	1	1	1
Nature unstated	—	2	—	—	—	—	—	—	—	—	—	1	—	1	—	—
Skull Non-malignant	2	—	—	—	2	—	—	—	—	—	—	—	—	—	—	—
Nature unstated	2	1	—	—	—	—	—	—	—	1	1	—	1	—	—	—
Jaw Non-malignant	2	2	—	—	—	—	—	—	—	—	—	—	1	—	1	2
Spine Non-malignant	1	1	—	—	1	—	—	—	—	1	—	—	—	—	—	—
Nature unstated	5	4	—	—	1	—	—	—	1	3	1	—	1	1	1	—
Thorax Nature unstated	7	2	—	—	—	—	2	—	2	1	2	1	1	—	—	—
Abdomen Cyst	—	3	—	—	—	—	—	—	—	2	—	—	—	—	—	1
Other benign ..	—	3	—	—	—	—	—	—	—	1	—	1	—	—	—	1
Nature unstated	32	62	1	—	2	2	3	3	2	4	3	13	13	21	8	19
Other sites .. Non-malignant	19	22	2	2	4	1	2	3	4	2	4	2	3	5	—	7
Nature unstated	12	13	—	2	1	2	—	1	1	1	2	1	5	3	3	3
Site not stated .. Adenoma ..	1	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—
Nature unstated	5	3	1	—	1	—	—	1	1	—	—	—	2	2	—	—
Total (50) ..	357	302	16	11	33	20	26	22	70	58	73	52	91	73	48	66
Total, all tumours	993	1479	91	65	131	210	129	267	184	357	183	231	185	198	90	151
„ benign tumours	381	816	24	18	40	95	37	178	55	207	69	124	88	107	68	87
„ nature unstated	612	663	67	47	91	115	92	89	129	150	114	107	97	91	22	64

been thought best to continue inclusion of these deaths in Table XLI. It may well be indeed that the five deaths from tumour of the prostate included in cause 50, all of which occurred at ages over 55, are also of the same nature. Another reason for believing that adenoma is indistinguishable from hypertrophy of the prostate is that the number of deaths so returned has suddenly increased to a great extent during the last two or three years. In 1911 it was 32, and in 1918, 45 only, so that the sudden increase to 115 in 1921 cannot well represent anything other than a sudden change in mode of certification.

Table 5 shows that the mortality ascribed to cause 50 has almost doubled in the last ten years. Comparison of Table XLI with its predecessors during that period does not reveal many striking changes for individual sites to account for this. Non-malignant tumours of the bladder (almost entirely villous growths) increased from 63 in 1911 to 108 in 1915, but have increased little further since. The greatest increase, indeed, has been of "tumours of the abdomen" of unstated nature, of which there were 25 in 1913, when the number is first noted, gradually increasing to 94 in 1921. Such increase for an indefinite form of return is exceptional. As regards the non-malignant tumours excluded from cause 50 Table 5 shows no increase of mortality from tumours of the uterus and ovary, but a very considerable increase from cerebral tumour, possibly due to increase in the proportion of cases diagnosed.

66. Alcoholism.—This heading in the International List of causes of death excludes organic disease attributed to alcoholism, so, in order to obtain as complete information as possible with regard to mortality from over indulgence in alcohol, all the deaths in certification of which any mention of alcohol appears are assembled in Table XLII. These deaths make up a total of 647, as against 182 classed to heading 66 as directly due to alcohol. The causes most frequently associated in death certification with mention of alcoholism, with the number of deaths in the case of each, were:—cirrhosis of the liver, 154; violence, 72; heart disease, 58; lobar pneumonia, 29; and neuritis and chronic nephritis, 19 each.

From alcoholism in both the wider and the narrower sense indicated above, there has been some abatement of the greatly increased mortality recorded for 1920. Heading 66 in Table 5 shows how closely mortality from this cause (in the narrower sense) is associated with the price of beer and spirits, and the ability to pay it. From a yearly mortality of about 18 per million before the war, when the beer and spirit duties were comparatively low, the rate rapidly fell to 2 in 1918, after which it rose to 6 in 1920. The fall to 5 in 1921 is presumably associated with lessened spending power in that year. This appears to have more than counteracted any effect in the opposite direction of increase in the hours of sale.

Table XLII.—England and Wales, 1921 : Deaths from or connected with Alcoholism.

	All Ages.		Under 25.		25—		35—		45—		55—		65—		75—	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
66. Deaths attributed directly to alcoholism	127	55	—	—	9	4	37	15	46	16	25	14	9	6	1	—
Deaths of which alcoholism was recorded as a secondary cause :—																
11. Influenza	6	3	—	—	1	—	1	—	3	2	1	1	—	—	—	—
21. Erysipelas	3	1	—	—	—	—	—	1	3	—	—	—	—	—	—	—
31. Tuberculosis of the respiratory system	5	3	—	—	—	—	—	3	4	—	1	—	—	—	—	—
38. Syphilis	2	—	—	—	—	—	1	—	—	—	1	—	—	—	—	—
43-49. Cancer	2	3	—	—	—	—	—	—	—	—	2	—	—	1	—	2
51. Rheumatic fever	1	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—
52(1). Chronic rheumatism, chronic arthritis	1	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—
57. Diabetes	1	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—
70. Encephalitis	1	1	—	—	—	—	—	1	1	—	—	—	—	—	—	—
71. Meningitis	1	1	—	—	—	—	—	1	1	—	—	—	—	—	—	—
74. Cerebral hæmorrhage, apoplexy, etc... .. .	11	5	—	—	—	—	1	2	6	—	4	3	—	—	—	—
75(a). Hemiplegia	1	1	—	—	—	—	—	—	—	1	1	—	—	—	—	—
76. General paralysis of the insane	—	1	—	—	—	—	—	—	—	1	—	—	—	—	—	—
78. Epilepsy	4	—	—	—	1	—	—	—	3	—	—	—	—	—	—	—
82. Hysteria and Neuritis	10	9	—	—	—	1	3	3	2	3	3	2	2	—	—	—
83. Cerebral softening	1	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—
86(1). Mastoid disease	—	1	—	—	—	—	—	—	—	1	—	—	—	—	—	—
90(2). Mitral valve disease... .. .	2	1	—	—	—	—	—	—	1	—	1	—	—	1	—	—
90(4). Other or unspecified valve disease	6	1	—	—	—	1	1	—	2	—	3	—	—	—	—	—
90(5). Fatty heart	20	9	—	—	1	—	2	2	5	3	8	3	3	1	1	—
90(6)(7). Other or unspecified myocardial disease	9	5	—	—	1	—	2	1	2	—	4	4	—	—	—	—
90(9). Undefined heart disease	4	1	—	—	—	—	—	—	—	—	2	—	2	1	—	—
91(b). Arterio-sclerosis	9	2	—	—	—	—	—	—	2	—	6	1	1	1	—	—
99. Bronchitis	9	5	—	—	—	—	2	—	3	3	1	1	3	1	—	—
100. Broncho-pneumonia... .. .	3	1	—	—	2	—	—	—	1	—	—	1	—	—	—	—
101(a). Lobar pneumonia	25	4	—	—	1	—	7	—	6	2	6	2	3	—	2	—
102. Pleurisy	1	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—
Other diseases of the respiratory system	3	—	—	—	—	—	—	—	1	—	2	—	—	—	—	—
108(1). Diseases of the teeth and gums	1	1	—	—	—	—	—	1	1	—	—	—	—	—	—	—
112(1). Inflammation of the stomach	5	3	—	—	—	—	3	1	2	—	—	—	—	1	—	1
112(2). Other diseases of the stomach	—	1	—	—	—	—	—	—	—	—	—	1	—	—	—	—
113-114. Diarrhœa and enteritis	1	1	—	—	—	—	—	1	1	—	—	—	—	—	—	—
118(a). Hernia	2	—	—	—	—	—	—	—	—	—	2	—	—	—	—	—
122(a). Cirrhosis of the liver	100	54	—	—	—	2	15	7	39	21	36	13	8	10	2	1
129. Chronic nephritis	11	8	—	—	1	1	3	1	—	1	4	3	3	2	—	—
133. Diseases of the bladder	2	—	—	—	—	—	1	—	1	—	—	—	—	—	—	—
134(a). Stricture of the urethra	1	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—
151. Gangrene	—	1	—	—	—	—	—	—	—	1	—	—	—	—	—	—
153(1). Phlegmon	1	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—
155(1). Infective osteomyelitis and periostitis	1	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—
165-174. Suicide	9	4	—	—	1	—	2	1	4	1	2	2	—	—	—	—
182. Accidental drowning	3	1	—	—	1	1	1	—	1	—	—	—	—	—	—	—
185. Injury by fall	25	3	—	—	3	—	1	2	10	—	6	1	4	—	1	—
188. Injury by crushing (vehicles, railways, etc.)	8	—	—	—	2	—	4	—	1	—	—	—	1	—	—	—
Other violence	16	3	—	—	3	—	6	1	3	1	3	1	1	—	—	—
Total	454	193	—	—	27	10	96	44	156	57	126	53	42	25	7	4

70-86. Diseases of the Nervous System.—Reference may be made to certain changes in classification now first affecting this portion of the list of causes of death. Poliomyelitis, encephalitis lethargica and meningococcal meningitis have been transferred to the epidemic diseases, amongst which they have already been referred to, and cretinism to that of non-epidemic general diseases. On the other hand cerebral embolism and thrombosis have been transferred from circulatory to nervous diseases, where they are stated in association with cerebral hæmorrhage. A serious defect in the latter heading, which had gradually arisen owing to the increasing practice of recording on death certificates not only the cerebral hæmorrhage itself but the arterial disease giving rise to it, which in such cases, being the primary cause, is necessarily selected for tabulation, has now been remedied by distinguishing amongst deaths from arterio-sclerosis those associated with cerebral hæmorrhage. This addition in 1921 raises the total number of these deaths from 22,668 (74a, cerebral hæmorrhage including “apoplexy”) to 26,664—an increase of 18 per cent.

Disseminated sclerosis and paralysis agitans have by international agreement been changed from diseases of the spinal cord to “other diseases of the nervous system,” under which heading they are now first separately distinguished in this Review. The deaths attributed to the former numbered 632, and to the latter 653, and so exceeded by far those from many other diseases which have long been separately tabulated.

87-90. Heart Diseases.—This comprehensive title, covering all forms of heart disease, appears in the short list applying to localities for the first time, replacing the former title “organic heart disease,” which excluded pericarditis, acute endo- and myo-carditis, angina pectoris, and disordered action of the heart. The former “organic,” now “other,” heart disease (90) has been sub-divided into nine groups distinguishing as far as the returns permit myocardial and valvular disease, with sub-divisions of each.

It will be advisable to postpone any detailed examination of the results obtained from this sub-division until the 1921 Census ages have been tabulated, so permitting comparison of mortalities in age groups, but meanwhile the following statement will serve to illustrate the comparative importance and sex incidence of mortality from various forms of heart disease. The proportion of the deaths returned for each sex from each sub-heading per 100,000 from all forms of heart disease is stated, first for males and then for females—87 pericarditis, 777, 546; 88(1) infective endocarditis, 2,901, 1,666; 88(2) other acute endocarditis, 1,258, 1,200; 88(3) acute myocarditis, 457, 414; 89 angina pectoris, 2,977, 1,193; 90(1) aortic valve disease, 7,682, 2,956; 90(2) mitral valve disease, 12,899, 18,683; 90(3) aortic and mitral valve disease, 1,959, 1,266; 90(4) unspecified (or other)

valve disease, 22,764, 23,447 ; 90(5) fatty heart, 4,376, 4,608 ; 90(6) cardiac dilatation, 1,951, 1,826 ; 90(7) other or unspecified myocardial disease, 17,495, 18,286 ; 90(8) disordered action of the heart, 910, 1,012 ; 90(9) heart disease (undefined), 21,594, 22,897. Roughly, almost half the deaths in each sex are attributed to valvular disease, and almost one-fourth to myocardial disease, while for most of the remainder (22 per cent. of the total) certification is left entirely vague. Pericarditis, infective endocarditis, angina pectoris, and aortic valve disease are much more frequent in males, and mitral valve disease in females. All of these sex differences are already well known, except perhaps that applying to infective endocarditis (though here also clinical records had yielded results almost identical with that just stated—males 64 per cent.) ; and in all the other cases where the records of Table 5 are available they are seen to be of old standing. But the history in this respect of infective endocarditis is very remarkable. Table 5 shows that before the war its incidence was equal on the two sexes, but that since 1918 the rate for males has been 50 to 100 per cent. in excess of that for females. The apparent sex equality during the war is of doubtful significance, owing to change in the male (civilian) population at risk. The change, therefore, may have commenced before 1919, especially if all males, and not merely civilians, be considered. The facts that the mortality of males in 1921 was more than double that prevailing before the war and that the increase is largely confined to the age of military service, deaths at 20–45 having increased from 142 in 1913 to 543 in 1921, suggest that the change has resulted from infection entailed in some way by military service, even though normally the course of the disease is too rapid to date the onset of cases dying in 1921 back to the years of war. As against this it may be noted that the rate for females also has been rising rapidly since 1919, though not particularly at 20–45 ; but if, considering “infective” and “other acute” endocarditis as representing merely different intensities of the same condition, we compare the records for both jointly, we find that an appreciable female excess before the war has been converted into a large male excess since, even though the less differs from the more intense affection in exhibiting no male excess. Possibly it is too early in the history of this remarkable change to expect the mortality records to throw much light upon its cause, but the movement of these rates in the immediate future will obviously be a matter of considerable interest.

The age distribution of mortality from the various forms of heart disease distinguished can be roughly traced in Table 17. From heart disease generally and from angina pectoris and valvular and myocardial disease, most deaths occur quite late in life, with a maximum at about 65–75. But the deaths from pericarditis and acute endocarditis are widely scattered, many occurring in early life. The maximum incidence of infective endocarditis is in middle life, whereas that from other acute

endocarditis is equally great in childhood, when few deaths are referred to the more intense form of disease. The sudden drop after age 45 in deaths allocated to "other acute endocarditis" is due to the fact that prior to this age "endocarditis" so returned is taken as acute, and after it as chronic.

100, 101. **Pneumonia.**—Table 5 shows that mortality from this disease, as from others affecting the respiratory system, was exceptionally low in 1921, a feature of the year which must be associated with the fact that Table 29 shows each of its four quarters to have been warm and dry. The death-rate from respiratory diseases as a whole, 1,955 per million living, is much the lowest recorded in Table 5, and no doubt the same statement would apply however far back the comparison were carried. Summing the rates for bronchitis, pneumonia, laryngitis and pleurisy, which account for 1,852 out of the total mortality of 1,955 in 1921 we find (Decennial Supplement, 1901–10, Table 10) their standardized rates in successive decennia during 1861–1910 to have been as follows:—2,760 (1861–70), 3,198, 3,201, 3,105 and 2,472 (1901–10). There has therefore been a great fall during the present century in this form of mortality. In 1871–90 the death-rate attributed to bronchitis alone exceeded that ascribed to all forms of respiratory disease in 1921.

The death-rates from pneumonia, 1,104 for males and 745 for females, are the lowest recorded for many years. They can only be paralleled by going back to a time when the proportion of deaths from respiratory disease ascribed to pneumonia was very much smaller than at present. The proportions of deaths ascribed to broncho-, lobar and undefined pneumonia were 50·3, 23·5 and 26·2 per cent. respectively. For both broncho- and lobar pneumonia these proportions are the highest in any year since 1901, when their shares were but 40·1 and 6·3 per cent., the remaining 53·6 being undefined. Table 18 shows that of the first nine months of the year March returned most deaths, 4,671, and August least, 1,305; and that the same months supplied the highest and lowest numbers of deaths from respiratory disease generally.

128, 129. **Acute and Chronic Nephritis.**—Table 5 shows the death-rates from both forms of disease to have been less than in any year since 1910. During the five decennia ending with that date large and steady increase of the deaths so classified had been the rule.

143–150. **The Puerperal State.**—The number of deaths assigned to pregnancy or childbirth was 3,322 (Table XLV) corresponding to a rate of 3·91 per 1,000 births. Inclusion of the 925 deaths in Table XLVII raises the proportion to 5·00 deaths stated to have been caused by or associated with pregnancy and childbirth for every 1,000 births.

For comparison of the deaths definitely assigned to pregnancy and childbirth with years prior to 1911 deduction is required of 177 deaths from puerperal nephritis and albuminuria (Table XLV), which before that date were not distinguished as puerperal. The resultant rate of 3·71 deaths per 1,000 live births is compared in Table XLIII with similar rates for the preceding thirty years. The comparison can be extended back to 1876, but the records suggest that the figures from about 1890 onwards are more inclusive than those relating to earlier dates. It will be seen that a considerable decline is shown for 1921 from the high rates of the two preceding years, and that the total puerperal mortality was below the average for any of the six preceding quinquennia.

Table XLIII.—Mortality of Women in Childbirth per Thousand Children Born Alive, distinguishing Septic and Other Causes, 1891–1921. (Classification as in use before 1911.)

Year.	Deaths per 1,000 Births.			Year.	Deaths per 1,000 Births.			Year.	Deaths per 1,000 Births.		
	Sepsis.	Other Causes.	Total Child-birth.		Sepsis.	Other Causes.	Total Child-birth.		Sepsis.	Other Causes.	Total Child-birth.
1891–95	2·60	2·89	5·49	1910	1·42	2·14	3·56	1916	1·47	2·40	3·87
1896–1900	2·12	2·57	4·69	1911	1·52	2·15	3·67	1917	1·39	2·27	3·66
1901–05	1·95	2·32	4·27	1912	1·47	2·31	3·78	1918	1·35	2·20	3·55
1906–10	1·56	2·18	3·74	1913	1·34	2·37	3·71	1919	1·76	2·36	4·12
1911–15	1·50	2·31	3·81	1914	1·63	2·32	3·95	1920	1·87	2·25	4·12
1916–20	1·59	2·29	3·88	1915	1·56	2·38	3·94	1921	1·46	2·25	3·71

When distinction is made between deaths ascribed to septic and to other causes it is seen that the fall in 1921 applies entirely, as did the rise in the two previous years mainly, to the former. Mortality from non-septic causes is little changed, but that from sepsis is 22 per cent. lower than in 1920, and like the total rate, lower than the average for any of the six preceding quinquennia. It may be noted in this connexion that the increase in erysipelas mortality which accompanied the high rate from puerperal sepsis in 1920 has in 1921 been succeeded by a decrease (Table 5).

The distribution throughout the country of the mortality ascribed to childbirth is outlined in Table XLIV.

There is little difference, on the whole, between town and country, though there is some general tendency for septic mortality to increase, and non-septic to decrease, with urbanization. There is much more difference between the parts of the country compared than between the classes of area. Wales returns the highest rate in consequence of death-rates from non-septic causes in excess of any of the corresponding English rates and of rates from sepsis which are also the highest in the table except in the case of the county boroughs. Then comes the North, with rates from both septic and non-septic causes uniformly in excess of average, and then, at a long interval, the South and Midlands.

Table XLIV.—Distribution throughout England and Wales of Mortality of Women in Childbirth, per Thousand Children Born Alive, distinguishing Septic and Other Causes, 1921.

			North.	Mid-lands.	South.	Wales.	England and Wales.
London	{	Sepsis ..	—	—	1.42	—	1.42
		Other causes	—	—	1.56	—	1.56
		All causes	—	—	2.98	—	2.98
County Boroughs ..	{	Sepsis ..	1.78	1.29	1.06	1.35	1.54
		Other causes	2.60	2.01	2.30	2.99	2.40
		All causes	4.38	3.30	3.36	4.34	3.94
Other Urban Districts	{	Sepsis ..	1.32	1.16	1.10	1.72	1.27
		Other causes	3.28	2.05	2.67	3.47	2.76
		All causes	4.60	3.21	3.77	5.19	4.03
Rural Districts ..	{	Sepsis ..	1.44	0.95	1.33	1.80	1.25
		Other causes	3.30	2.53	2.65	4.55	2.97
		All causes	4.74	3.48	3.98	6.35	4.22
All Areas	{	Sepsis ..	1.58	1.15	1.29	1.67	1.38
		Other causes	2.92	2.16	2.10	3.68	2.53
		All causes	4.50	3.31	3.39	5.35	3.91

The non-septic rate is much the lowest in London, as in each of the two preceding years; and in fact, the general distribution is very similar to that in 1919 and 1920, the only preceding years for which the table has been prepared.

As in those years, mortality from sepsis is much more evenly distributed than that from other causes. The former ranges from 0.95 in the Midland rural districts to 1.80 in the rural districts of Wales; while the latter varies between a minimum of 1.56 in London and a maximum, again in the Welsh rural districts, of 4.55.

Table XLV.—England and Wales, 1921: Deaths of Women Classed to Pregnancy and Childbearing.

Cause of Death.	All Ages.	Ages.						
		15—	20—	25—	30—	35—	40—	45 and upwards.
143. (a) Abortion	107	3	8	19	19	34	23	1
(b) Ectopic gestation.. ..	83	—	4	25	24	21	8	1
(c) Other accidents of pregnancy:—								
Accidental hæmorrhage..	11	—	1	2	2	4	2	—
Ante-partum hæmorrhage	62	—	7	7	11	23	13	1
Uncontrollable vomiting	39	1	11	9	5	11	2	—
Hydatid mole	9	—	3	2	—	1	2	1
Vesicular mole	6	—	1	—	2	2	—	1
Tubal mole	1	—	—	—	—	1	—	—

Table XLV.—England and Wales, 1921 : Deaths of Women
Classed to Pregnancy and Childbearing—*continued*.

Cause of Death.	All Ages.	Ages.						
		15–	20–	25–	30–	35–	40–	45 and up- wards.
Retroversion of gravid uterus	5	—	—	3	1	1	—	—
Rupture of pregnant uterus at site of Cæsarean operation scar	1	—	—	—	1	—	—	—
Hydramnios	1	—	—	—	1	—	—	—
Pregnancy apart from above complications :—								
With secondary causes as follows :—								
Chorea	5	1	1	2	1	—	—	—
Laryngitis	1	—	—	1	—	—	—	—
Without stated secondary cause	3	—	2	—	—	1	—	—
144. Puerperal hæmorrhage :—								
Placenta prævia	225	1	15	37	48	76	42	6
Adherent, detached, re- tained, placenta	42	1	6	9	8	9	9	—
Accidental hæmorrhage ..	21	—	2	—	3	8	8	—
Post-partum hæmorrhage ..	181	3	21	37	44	44	30	2
145. Other accidents of childbirth :								
Contracted pelvis	49	—	8	11	13	10	6	1
Craniotomy	13	—	1	6	4	1	—	1
Cæsarean section†	50	—	3	14	18	9	6	—
Version	2	—	—	—	—	—	2	—
Instrumental delivery ..	8	—	2	2	3	1	—	—
Rupture of uterus	22	—	3	4	4	7	3	1
Rupture of bladder	1	—	—	—	—	—	1	—
Laceration of perineum ..	2	—	—	—	—	1	1	—
Malpresentation	11	—	—	1	4	4	2	—
Inversion of uterus	15	—	7	6	1	1	—	—
Eversion of uterus	1	—	1	—	—	—	—	—
Inertia of uterus	3	—	1	—	—	2	—	—
Rigid cervix of uterus ..	2	—	—	—	1	1	—	—
Abnormal foetus	6	—	2	2	—	1	1	—
Difficult and prolonged labour	63	2*	10	13	16	19	3	—
Childbirth apart from above complications :—								
With secondary causes as follows :—								
Anæmia	14	—	1	7	3	2	1	—
Meningitis	4	1	1	—	2	—	—	—
Pericarditis	1	—	1	—	—	—	—	—
Acute endocarditis ..	2	—	—	—	—	1	1	—
Acute myocarditis ..	1	—	—	—	1	—	—	—
Dilatation of heart ..	2	—	—	—	1	—	—	1
Bradycardia	1	—	—	1	—	—	—	—
Bronchitis	9	1	2	3	—	—	3	—
Broncho-pneumonia ..	17	—	2	6	5	4	—	—
Pneumonia (type not stated)	31	—	7	7	6	7	4	—
Pleurisy	1	—	—	—	—	1	—	—
Gastritis	3	—	—	1	1	1	—	—

*Including one aged 14 years. †In addition Cæsarean section was stated to have been performed in the case of 39 deaths included under other headings in this table—Vomiting of pregnancy 1, placenta prævia 4, contracted pelvis 19, malpresentation 1, hydrocephalic foetus 1, eclampsia 3, puerperal sepsis 10,—and of 23 other deaths classed to causes specified in Table XLVII.

Table XLV.—England and Wales, 1921 : Deaths of Women
Classed to Pregnancy and Childbearing—*continued*.

Cause of Death.	All Ages.	Ages.						
		15—	20—	25—	30—	35—	40—	45 and up- wards.
Other diseases of the stomach	3	—	—	1	—	1	1	—
Diarrhoea and en- teritis	13	—	3	5	1	—	4	—
Other diseases of the intestine	2	1	—	—	—	1	—	—
Jaundice	1	—	—	1	—	—	—	—
Cystitis	1	—	—	—	—	—	1	—
Without stated secondary cause	28	—	3	8	4	9	3	1
146. Puerperal sepsis :—								
streptococcal infection ..	7	—	2	4	—	—	—	1
pneumococcal infection ..	2	—	—	2	—	—	—	—
staphylococcal infection ..	2	—	—	2	—	—	—	—
gonococcal infection ..	2	—	1	1	—	—	—	—
bacillus coli infection ..	1	—	—	—	—	1	—	—
septic phlebitis, septic thrombosis	30	—	4	1	11	12	2	—
septic pneumonia	10	—	—	3	4	1	2	—
septic endocarditis	2	—	—	2	—	—	—	—
septicaemia	635	18	111	154	161	125	60	6
sepsis	57	2	10	18	10	13	3	1
septic intoxication, saprae- mia	72	—	10	23	19	12	7	1
pelvic peritonitis	13	—	3	3	1	3	3	—
peritonitis	76	3	8	13	29	17	5	1
salpingitis	11	1	4	1	3	—	2	—
metritis	9	—	1	1	—	5	1	1
endometritis	17	—	7	4	3	1	2	—
parametritis	6	—	—	3	—	3	—	—
perimetritis	2	—	2	—	—	—	—	—
erysipelas	3	—	—	1	—	2	—	—
pyaemia	34	1	4	7	5	8	8	1
pelvic cellulitis	31	1	4	11	6	4	4	1
cellulitis	1	—	—	—	—	—	1	—
pelvic abscess	7	—	1	5	1	—	—	—
blood poisoning	4	—	—	2	1	1	—	—
other specified septic con- ditions	5	—	2	1	2	—	—	—
“ puerperal fever ”	132	3	32	33	28	26	8	2
147. (1) Puerperal phlegmasia alba dolens and phlebitis ..	64	—	2	9	21	16	13	3
(2) Puerperal embolism and sudden death	262	4	25	53	67	70	37	6
148. Puerperal albuminuria and convulsions :—								
Puerperal nephritis and uraemia	146	3	20	22	40	34	25	2
Puerperal albuminuria and Bright's disease ..	31	1	2	8	6	10	4	—
Puerperal convulsions ..	427	24	106	110	89	64	29	5
149. Puerperal insanity	29	1	7	10	6	2	3	—
150. Puerperal diseases of the breast	7	1	2	2	—	1	1	—
Total	3,322	78*	510	761	771	751	402	49

* Including one aged 14 years.

The records of cases of puerperal fever notified are collated with those of births and deaths in Table XLVI.

Table XLVI.—Puerperal Fever, 1921 : Prevalence and Fatality.

	Cases notified per 10,000 Births.					Deaths per 1,000 Cases notified.				
	North.	Mid-lands.	South.	Wales.	England and Wales.	North.	Mid-lands.	South.	Wales.	England and Wales.
London	—	—	35	—	35	—	—	402	—	402
County Boroughs ..	38	33	17	14	33	470	397	630	947	464
Other Urban Districts ..	22	22	19	20	21	612	520	581	881	602
Rural Districts	16	16	16	16	16	908	579	833	1,097	774
All Areas	30	24	26	18	26	536	472	498	949	530

Notification is evidently much less complete in the country than in the town, for the proportion of notified cases to births is very much lower, whereas that of deaths is not (Table XLIV). This applies mainly to the North and Midlands. In the rural districts, except those of the Midlands, and in the towns of Wales, deaths almost equalled notified cases, while in the rural districts of Wales they were actually in excess of them.

Table XLV gives full particulars of the deaths assigned to the puerperal state.

Table XLVII shows the causes of deaths stated to have been complicated by the existence of the puerperal state. The cause of death most largely represented in this table is, as usual, heart disease (252 deaths). Next to this come pneumonia (166), phthisis (117) and influenza (97).

Table XLVII.—England and Wales, 1921 : Deaths of Women not classed to Pregnancy and Childbearing, but returned as associated therewith.

Cause of Death.	All Ages.	Ages.						
		15—	20—	25—	30—	35—	40—	45 and up-wards.
Typhoid fever	1	—	—	1	—	—	—	—
Malaria	1	—	—	—	1	—	—	—
Scarlet fever	14	1	3	6	1	2	1	—
Diphtheria	5	—	1	1	1	2	—	—
Influenza with pneumonic complications specified	50	1	8	11	17	8	5	—
Influenza with other pulmonary complications specified	8	—	—	1	4	1	1	1
Influenza with non-pulmonary complications specified	39	2	10	8	13	4	2	—
Poliomyelitis	1	—	—	—	—	1	—	—
Encephalitis lethargica	1	—	1	—	—	—	—	—
Tetanus (bacillary)	3	—	—	1	1	—	1	—
Tuberculosis of the respiratory system	117	1	31	26	26	23	8	2
Tuberculosis of the nervous system	1	—	1	—	—	—	—	—
Tuberculosis of the vertebral column	1	—	—	—	1	—	—	—
Disseminated tuberculosis	6	—	1	2	1	1	—	1
Syphilis	5	1	—	1	2	1	—	—
Gonococcal infection	1	—	1	—	—	—	—	—
Cancer	19	—	—	1	7	7	4	—

Table XLVII.—England and Wales, 1921 : Deaths of Women not classed to Pregnancy and Childbearing, but returned as associated therewith—*continued.*

Cause of Death.	All Ages.	Ages.						
		15–	20–	25–	30–	35–	40–	45 and up-wards.
Rheumatic fever	12	—	—	5	2	5	—	—
Diabetes	4	—	1	1	1	1	—	—
Pernicious anæmia	23	—	2	5	5	7	4	—
Exophthalmic goitre	7	—	—	4	1	1	—	1
Other diseases of the thyroid gland	2	—	—	2	—	—	—	—
Purpura	2	—	1	1	—	—	—	—
Other general diseases	2	—	—	—	—	2	—	—
Meningitis	1	—	—	—	—	1	—	—
Disease of the spinal cord	1	—	1	—	—	—	—	—
Cerebral hæmorrhage, apoplexy ..	5	—	—	—	—	3	2	—
Epilepsy	14	—	3	3	1	6	1	—
Chorea	1	—	—	—	1	—	—	—
Other diseases of the nervous system	3	—	—	1	1	1	—	—
Diseases of the ears	3	—	—	2	—	—	1	—
Pericarditis	3	—	—	—	2	1	—	—
Infective endocarditis	7	—	—	4	1	1	1	—
Other acute endocarditis	10	—	1	3	2	4	—	—
Acute myocarditis	16	—	1	5	1	4	5	—
Angina pectoris	1	—	—	—	—	1	—	—
Mitral valve disease (alone)	74	—	11	17	15	21	9	1
Other or unspecified valvular disease	58	1	5	17	12	16	6	1
Fatty heart	19	1	1	—	2	6	8	1
Other or unspecified myocardial disease	19	—	—	3	2	4	9	1
Other or undefined heart disease ..	45	—	5	10	7	14	8	1
Other diseases of the circulatory system	3	—	—	—	1	1	1	—
Bronchitis	8	—	—	2	2	3	1	—
Broncho-pneumonia	20	—	4	5	4	5	2	—
Lobar pneumonia	86	2	7	23	23	26	5	—
Pneumonia (type not stated)	60	1	5	17	9	21	5	2
Pleurisy	4	—	—	2	1	1	—	—
Asthma	9	—	1	1	3	3	1	—
Diseases of the teeth and gums	1	—	1	—	—	—	—	—
Tonsillitis	1	—	—	—	—	1	—	—
Ulcer of the stomach	7	—	1	2	2	1	1	—
Ulcer of the duodenum	2	—	—	—	—	1	1	—
Inflammation of the stomach	6	1	1	—	2	1	1	—
Diarrhœa and enteritis	3	—	—	1	1	—	1	—
Appendicitis and typhlitis	14	1	3	3	2	5	—	—
Hernia	2	—	—	1	—	1	—	—
Intestinal obstruction	14	1	1	3	2	7	—	—
Acute yellow atrophy of the liver	11	—	3	1	3	4	—	—
Cirrhosis of the liver	1	—	—	1	—	—	—	—
Biliary calculi	3	—	—	1	—	2	—	—
Other diseases of the digestive system	3	—	—	2	—	1	—	—
Chronic nephritis	35	—	4	8	10	7	6	—
Calculi of the urinary passages	1	1	—	—	—	—	—	—
Diseases of the bladder	1	1	—	—	—	—	—	—
Cysts and other tumours of the ovary not returned as malignant	4	—	—	1	3	—	—	—
Tumours of the uterus not returned as malignant	11	—	—	2	3	4	2	—
Diseases of the bones and organs of locomotion	2	—	—	—	—	2	—	—
Congenital malformation of heart	2	—	1	—	1	—	—	—
Violence	6	—	2	1	2	—	1	—
Total	925	16	123	219	205	246	104	12

Anæsthetics.—Deaths during or connected with the administration of an anæsthetic have all, from 1911 onwards, been classified to the condition for which the anæsthetic was administered. In order, however, to continue the information previously afforded as to such cases a secondary tabulation is now made of all deaths on the certificates relating to which any mention is made of the administration of an anæsthetic. These are classified in Table XLVIII according to sex and age and to the nature of anæsthetic, while the list appended to the table shows the condition for which the anæsthetic was administered and the sex and age of the patient, but not the kind of anæsthetic. Causes of death in this list are numbered in International List order. The bracketed figures following them denote the exact ages of the deceased, ages of males being printed thus (3) and of females thus (3).

Table XLVIII.—England and Wales, 1921 : Deaths under or connected with the Administration of various Anæsthetics.

Anæsthetic.	Age.																		
	All Ages.	0—	1—	2—	3—	4—	5—	10—	15—	20—	25—	30—	35—	40—	45—	50—	55—	65—	
Chloroform {M. F.	38 37	4 1	1 2	— —	— 2	— —	2 7	2 1	1 2	— —	1 4	2 6	3 5	4 2	3 —	3 2	6 3	6 —	
Delayed chloroform poisoning .. {M. F.	2 5	— —	1 1	— —	— —	— —	1 —	— 1	— 1	— 1	— —	— —	— —	— —	— 1	— —	— —	— —	
Chloroform and ether {M. F.	53 19	3 —	— —	— —	1 —	1 —	4 2	4 1	4 1	3 —	4 —	1 6	1 —	4 4	6 2	1 —	7 2	9 1	
Chloroform and ether; delayed chloroform poisoning F.	1	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	
Ethyl chloride, chloroform and ether M.	1	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	
Chloroform and cocaine M.	1	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	
Ether {M. F.	32 34	3 1	1 —	— 1	— 2	— 2	4 6	2 2	2 1	3 4	1 —	1 4	— 3	3 1	3 1	2 2	3 3	4 1	
Acidosis following ether F.	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	
Ether and novocaine M.	1	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	
A.C.E. mixture {M. F.	11 1	2 —	— 1	— —	1 —	— —	1 —	— —	— —	— —	— —	— —	— —	2 —	— —	1 —	3 —	1 —	
Nitrous oxide {M. F.	6 4	— —	— —	— —	— —	— —	— 1	— 1	1 —	— —	1 —	— —	— —	— —	1 1	— 1	2 —	1 —	
Cocaine F.	1	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	
Ethanesal {M. F.	1 1	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —	— 1	— —	— —	1 —	— —	— —	
Ethyl chloride {M. F.	4 2	— —	— —	— 1	1 —	1 —	— —	— 1	— —	— —	— —	— —	— —	— —	— —	— —	1 —	— —	
Ethyl chloride and ether M.	1	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Eudrenine M.	1	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	
Stovaine {M. F.	2 3	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —	— 2	— —	— 1	2 —	
Stovaine and ether F.	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	
Kind not stated* {M. F.	50 23	5 1	1 1	1 —	1 —	1 —	7 —	1 —	— —	— 4	— 2	4 2	— 2	— 2	2 3	3 2	9 2	8 1	
Total {M. F.	204 133	17 3	4 5	2 2	4 4	3 2	20 16	9 7	9 7	7 9	12 6	4 18	4 11	15 10	17 9	17 10	30 11	30 3	

* The deaths under anæsthetics of kind not stated include those of 4 males and of 2 females from acetonæmia, and of 1 male and 4 females from acidosis.

Conditions for which Anæsthetics were administered in the
above cases.

10. Diphtheria (5);—tracheotomy (3, 6). 31. Pulmonary tuberculosis (26);—examination (39);—and lupus (43); tuberculosis of lungs, spine and hip joint (19). 32. Tubercular meningitis, lumbar puncture (16). 33. Tuberculous peritonitis (1). 34. Tuberculosis of spine (6, 15, 13); abscess of spine (41). 35. Tuberculosis of hip (11). 36. Tuberculous mastoiditis (0, 0); tuberculous glands (1, 6, 30);—of neck (3). 41. Septicæmia (45). 43–49. Cancer of—tongue (47, 52, 57, 59, 61, 62, 64, 70); tongue, operation on glands of neck (46); tongue and tonsil (45); mouth (66); jaw (36, 60); pharynx (71); pharynx, tracheotomy (56, 70); naso-pharynx (22); œsophagus (71); pylorus (50); stomach (66, 58); peritoneum (42); colon (62, 75); large intestine (65); rectum (53, 53, 59, 60, 47, 49, 68); uterus (55, 58, 70); breast (39, 51, 58); face (66); larynx (47, 59, 70, 70); lung (52); kidney (40); prostate (72, 74); glands of neck (89); thigh bone (11); chest (57). 50. Adenomatous goître (18); polypus—of nose (46, 53); of rectum (56); cyst of pancreas (45). 52. Osteo-arthritis of hip (54). 60. Exophthalmic goître (39). 70. Cerebral abscess (40). 71. Lumbar puncture for meningism (15). 75. Paraplegia (48). 84. Brain tumour (34). 85. Keratitis (68). 86. Mastoid disease (0, 0, 1, 11, 9); middle ear disease (12, 12). 93. Hæmorrhoids (50). 94. Enlarged glands (23);—and adenoids (13); abscess of groin (0). 97. Deflected nasal septum and dermoid cyst (21). 98. Laryngitis (1). 100. Broncho-pneumonia, tracheotomy (6). 102. Empyema (0, 0, 2, 6, 9, 42, 42, 49, 56, 1, 6, 7, 20, 21, 26). 107. Abscess of lungs (38, 4, 41). 108. Extraction of teeth (28, 31, 33, 12, 28, 32, 53); pyorrhœa (15); Ludwig's angina (27). 109. Enlarged tonsils (4, 9, 14, 19, 24); enlarged tonsils and adenoids (3, 4, 5, 5, 6, 6, 11, 21, 27, 2, 5, 5, 6, 9); adenoids (15); septic throat, operation to open trachea (3). 111. Gastric ulcer (44, 39); duodenal ulcer (48). 112. Perforated stomach (48). 117. Appendicitis (5, 6, 7, 11, 11, 13, 18, 18, 28, 45, 46, 51, 66, 1, 3, 9, 9, 13, 16, 20, 23, 42). 118. Hernia (0, 1, 3, 19, 22, 26, 31, 42, 43, 45, 45, 46, 46, 47, 51, 55, 55, 59, 60, 62, 62, 73, 21, 51, 53, 61); hernia and phimosis (0); taking out stitches after operation for hernia (6); intestinal obstruction (7, 20, 51, 53, 58, 58, 63, 69, 78, 22, 39, 51, 60); intussusception (0, 0); volvulus (67). 119. Intestinal fistula (30). 123. Gallstones (42, 60, 49, 52, 57). 124. Cholecystitis (49, 63);—operation for draining (52). 125. Pancreatitis (62). 126. Peritonitis (4, 73, 6). 131. Pyonephrosis (17, 12). 132. Renal calculus (52). 133. Retention of urine (62, 72); examination of bladder (56). 134. Stricture of urethra (50, 51, 62, 66). 135. Enlarged prostate (58, 65, 69, 70); adenoma of prostate (74). 136. Circumcision (0, 0, 0, 0, 0, 0, 0, 13). 137. Cyst of ovary (33); ovariectomy (49). 138. Pyosalpinx (43). 139. Fibroid tumour of uterus (42, 44, 47, 51); tumour of uterus (38). 140. Uterine hæmorrhage (32). 142. Inflammation

of breast (45). 143. Abortion, curettage (33); miscarriage, curettage (30); incomplete abortion, operation to remove products (40); ruptured tubal pregnancy (31, 35); ante-partum hæmorrhage (33); vomiting of pregnancy (27). 144. Placenta prævia (38); hæmorrhage of childbirth (33). 145. Childbirth (30, 33, 39); instrumental delivery (26, 34, 39); Cæsarean section (22, 29, 32, 40); difficult labour (35); prolonged labour (24, 33); malpresentation (25, 39); repair of ruptured perineum (44). 146. Puerperal septicæmia (32). 151. Gangrene of arm (74). 153. Cellulitis of face and neck (42); abscess—of buttock (27); of neck (3, 17, 43); of thigh (44). 155. Osteomyelitis (7);—of elbow joint (6); of femur (7); of thumb (41); scraping sinus of bone (43). 156. Ankylosis of elbow joint (41); removal of loose body behind knee (29); abscess of elbow joint (7). 158. Operation—for stretched ligature of knee (27); to reduce contraction of leg (61). 159. Cleft palate (0, 0, 1, 2, 3, 7); reduction of congenital dislocation of hip-joint (4). 165–203. Various forms of violence (1, 2, 6, 7, 8, 29, 29, 29, 32, 39, 42, 50, 50, 50, 51, 57, 66, 67, 70, 7, 15, 48, 60). 205. Examination of throat (56); exploratory operation (16);—of abdomen (23).

For the second time in succession the total number of deaths in Table XLVIII (337) is considerably higher than in any of the other years since 1910, for which alone the complete figures are available. For earlier years the record is contained in the tables of accidental deaths, but certain causes—strangulated hernia and cancer—were till 1911 preferred in tabulation to the anæsthetic used. This number had previously been very constant, having varied only during 1911–19 between 261 in 1915 and 306 in 1916, but in 1920 it suddenly increased to 366.

It must not be assumed that in all the cases tabulated death has been due to the anæsthetic, though in many, owing to the nature of the condition occasioning its administration, there may be strong presumption of this. In many others, however, it is impossible to distinguish between deaths from other causes during the administration of an anæsthetic and deaths ascribable to the anæsthetic itself.

The nature of the anæsthetic was stated in only 78 per cent. of the cases. In 31 per cent. of those in which it was stated chloroform is recorded as the only anæsthetic administered, and in 33 per cent. as administered in combination with some other agent, so that in only 36 per cent. of these cases was chloroform not used. The proportion for chloroform alone is the lowest for any of the ten years compared, while that for chloroform in combination is the highest except in 1920. As similar statements have applied for several years there seems to be a progressive tendency at present towards increasing mixture of other anæsthetics with chloroform.

Status Lymphaticus and Anæsthetics.—In addition to the 175 deaths primarily classified to diseases of the thymus (status

lymphaticus) in Table 17, its presence was noted in the case of 34 deaths under anæsthetics which were referred to the condition leading to the administration of the anæsthetic.

The sex and age distribution of these was as follows :—

	All Ages.	0—	5—	10—	15—	20—	25—	35—
Males	23	10	3	4	1	3	2	—
Females	11	5	2	1	1	1	1	—

165–174. **Suicide.**—Deaths from this cause numbered 3,759—2,763 of males and 996 of females. These numbers include only the deaths definitely attributed to suicide. In addition to them 1,187 others, 877 of males and 310 of females, were returned under “ open verdicts ” signifying that it could not be determined whether the violence which caused death resulted from accident, homicide, or suicide (*see* Part I., page 415). These deaths have all been classed as due to accident, but it is to be remembered that a number of them must have been due to suicide. The great bulk of them, 648 of males and 214 of females, are cases of drowning returned by coroners’ juries as “ found drowned.”

Mortality from suicide fell suddenly during the war for both sexes, but particularly for males, to a rate below any recorded for many years past. The lowest point was reached for each sex in 1917, but increase since then in the rates for both sexes has restored the pre-war level in 1921. Owing, however, to the increasing age of the population the crude rates compared in Table 5 are now subject to considerable decrease on standardization.

204, 205. **Ill-Defined Causes of Death.**—This heading in the International List of Causes of Death, to which 1,882 deaths have been allocated, excludes the ill-defined diseases of infancy and old age, 160(1) and 164(2). In this more comprehensive sense the deaths from ill-defined causes in 1921 numbered 34,127, or 7·44 per cent. of the total, as against 51,041, or 9·67 per cent., in 1911, all the items included contributing to the decline, though rather more deaths were attributed to old age in 1921 than in 1920.

Inquiries sent to medical practitioners and coroners requesting further information as to indefinitely certified deaths amounted to 6,222, and to these 5,399 replies were received with results to classification, the most important of which are set out in Table XLIX.

Reference to this table will demonstrate the ambiguity of certain forms of return which to the minds of the practitioners using them may be perfectly definite, because always used by them in a certain definite sense. This meaning, however, may be quite different from that associated with the same term in the minds of other practitioners.

Table XLIX.—England and Wales, 1921 : Replies to Inquiries respecting Indefinitely Certified Causes of Death.

Subject of Inquiry.	Replies received.	Replies amplifying previous information.	Deaths allocated as the result of inquiry to various important headings.
Croup	32	31	Diphtheria 7, Laryngismus stridulus 7, Laryngitis 13.
Membranous laryngitis	9	9	Diphtheria 8.
Pyæmia, septicæmia, etc.	188	150	Diseases of the teeth and gums 8, Tonsillitis 8, Puerperal sepsis 9, Diseases of the skin 21.
Tuberculosis ..	254	251	Tuberculosis of respiratory system 162, Tuberculosis of intestines and peritoneum 6, Tuberculosis of vertebral column 7, Disseminated tuberculosis 51, Other forms of tubercle 20.
Cancer (part or organ not stated) ..	873	818	Part or organ stated in 818 cases.
Tumour, growth, etc.	563	429	Syphilis 6, Cancer 319.
Rheumatism ..	62	62	Rheumatic fever 32, Chronic rheumatism 5, Osteo-arthritis 4.
Encephalitis ..	126	112	Influenza 4, Polioencephalitis 5, Encephalitis lethargica 33, Syphilis 7, Other forms of encephalitis 34, Meningitis 9, General paralysis of the insane 3.
Basal or basic meningitis	101	95	Meningococcal meningitis 30, Tuberculosis of nervous system 33, Meningitis—other forms 19.
Cerebro-spinal meningitis	140	130	Meningococcal meningitis 102, Tuberculosis of nervous system 7.
Spinal sclerosis ..	53	49	Syphilis 4, Tabes dorsalis 4, Other diseases of spinal cord 6, Disseminated sclerosis 34.
Cerebral sclerosis ..	32	32	Syphilis 2, Disseminated sclerosis 21, Arterio-sclerosis 7.
Paraplegia	76	54	Syphilis 7, Diseases of the spinal cord 22, Cerebral hæmorrhage, apoplexy 10.
General paralysis (outside asylums) ..	79	76	Diseases of spinal cord 5, Cerebral hæmorrhage, apoplexy 3, General paralysis of the insane 50, Disseminated sclerosis 5.
Paralysis	53	39	Diseases of the spinal cord 4, Cerebral hæmorrhage, apoplexy 11.
Acute primary pneumonia	95	92	Broncho-pneumonia 10, Lobar pneumonia 79.
Fibroid phthisis ..	133	131	Tuberculosis of respiratory system 96, Chronic interstitial pneumonia 27.
Hæmoptysis ..	53	41	Tuberculosis of respiratory system 21.
Stomatitis	36	36	Thrush, aphthous stomatitis 15.
Stricture of œsophagus	62	51	Cancer 38.
Hæmatemesis ..	28	21	Cancer 4, Gastric ulcer 11, Cirrhosis of liver 1.
Pyloric obstruction, stenosis, ect. ..	43	40	Cancer 17, Gastric ulcer 13.

Table XLIX.—England and Wales, 1921 : Replies to Inquiries respecting Indefinitely Certified Causes of Death—*continued*.

Subject of Inquiry.	Replies received.	Replies amplifying previous information.	Deaths allocated as the result of inquiry to various important headings.
Jaundice	48	30	Cancer 20.
Peritonitis	185	123	Tuberculosis of peritoneum, etc., 10, Cancer 3, Gastric ulcer 5, Appendicitis 49, Intestinal obstruction 3, Diseases of female genital organs 10, Puerperal sepsis 7.
Pemphigus (of infants)	134	119	Syphilis 48.
Hydrocephalus ..	95	91	Tuberculosis of nervous system 12, Congenital hydrocephalus 49.
Violence	220	218	Precise form of suicide 22, Injury by drowning 6, Injury by fall 60, Injury in mines and quarries 17, Injury by machines 3, Injury by crushing 45.
Ascites, dropsy ..	26	23	Diseases of the heart 9, Cirrhosis of liver 2, Chronic nephritis 3.
Syncope, heart failure (ages 1–70) ..	157	133	Diseases of the heart 84.
Operation	215	204	Cancer 16, Hernia, intestinal obstruction 19, Biliary calculi 13, Uterine tumour 18, Congenital malformations 9, Violence 5.
Other indefinite forms of certificate ..	1,228	1,053	—
Total ..	5,399	4,743	—

POPULATION.

The 13th Decennial Census of the population of Great Britain was taken on the night of the 19th/20th June, 1921, and the result of that enumeration, issued in a Preliminary Report* in August, 1921, was to show that the population of England and Wales as at that date, consisted of 37,885,242 persons, 18,082,220 being males and 19,803,022 females. The whole of the population figures there presented were stated to be provisional and subject to confirmation or amendment in the substantive Reports to be issued in due course when the full examination of the Census schedules has been completed. Judging by the experience of previous Censuses and also by the results in those portions of the country in which the final 1921 Census figures are known, the modifications are likely to be confined to adjustments of detail which will not affect the totals for the whole country to any appreciable extent.

* Census of England and Wales, 1921. Preliminary Report. Cmd. 1485. 1s. net.

Had accurate records of the various movements of population been available, it would have been possible to reproduce the Census figures by the method adopted for the estimation of the population in 1920 and the preceding years, viz., by taking the 1911 Census population as a starting point, adding the births and immigrants, and deducting the deaths and emigrants in the intervening period. As stated on previous occasions, however, while registration may be regarded as providing a complete record of births and deaths, an exact statement of migration is not attainable. The allowance for the latter is itself an estimate only, based, so far as civilians are concerned, upon the returns furnished to the Board of Trade, and in regard to non-civilians, upon the records of the several War Departments: further, no information at all is available in respect of the passenger traffic between the countries within the United Kingdom. The lack of precision in the migration data must thus be expected to introduce into the estimates an error which will tend to grow in degree as the date of the preceding Census becomes more remote.

Notwithstanding the peculiar complications introduced during the decennium 1911–1921 by the very large movement of the armed forces from and to the country, the estimate of the population as at the date of the 1921 Census, built up in this way, was stated in the Preliminary Report to have been in excess of the true population by a figure corresponding to about 1 per 1,000 of the population only. Such close approximation, representing, as it does, the net cumulative divergence of the successive annual estimates over a ten years' period of unusual disturbance is very satisfactory, but until the method has been subjected to the test of further Censuses and some knowledge gained of the error which may be expected normally to result from this basis of estimation it can hardly be regarded as owing nothing to any element of chance. It seems, however, to justify some degree of confidence in the estimates of total population for the years of the past intercensal period and generally to confirm a preference for the present method over the hypothetical basis adopted in connection with the estimates of former intercensal periods, which assumed the intercensal change to be proportionate to the change in the immediately preceding decennium.

The preliminary Census totals of population stated above have been adopted as the mid-year populations of 1921 for the purpose of the statistics presented in this Annual Review, no adjustment being made in respect of the eleven days by which the date of the Census preceded the middle of the year.

Age Distribution.—Statistics showing the analysis of the 1921 Census population by age are not yet available for the whole Country; and the method of distribution followed in the years 1915–1920, and described in the Reports for those years, has again been adopted for 1921.

The results are shown in the following table :—

Table L.—England and Wales : Estimated Age Distribution of the Population Enumerated in June, 1921. (Provisional Numbers.)

Age group.				Males.	Females.	Persons.
All Ages	..	..	..	18,082,220	19,803,022	37,885,242
0—	..	..	..	418,018	403,847	821,865
1—	..	..	..	426,373	412,896	839,269
2—	..	..	..	275,432	269,778	545,210
3—	..	..	..	283,311	278,358	561,669
4—	..	..	..	316,138	310,980	627,118
0—	..	..	..	1,719,272	1,675,859	3,395,131
5—	..	..	..	1,851,476	1,825,016	3,676,492
10—	..	..	..	1,871,680	1,859,101	3,730,781
15—	..	..	..	8,444,534	1,775,621	18,077,566
20—	..	..	..		1,693,819	
25—	..	..	..		1,684,108	
30—	..	..	..		1,613,406	
35—	..	..	..		1,515,575	
40—	..	..	..		1,350,503	
45—	..	..	..	987,104	1,162,336	2,149,440
50—	..	..	..	897,635	993,198	1,890,833
55—	..	..	..	751,633	805,127	1,556,760
60—	..	..	..	593,578	629,578	1,223,156
65—	..	..	..	431,660	487,297	918,957
70—	..	..	..	291,573	366,917	658,490
75—	..	..	..	153,807	221,890	375,697
80—	..	..	..	62,592	99,645	162,237
85 and upwards	..	..	..	25,676	44,026	69,702

Briefly the method consists of (1) obtaining the year's deaths arising from the population at each age as estimated at the middle of 1920 and treating the survivors as the population at the next higher age at the middle of 1921 ; (2) adjusting the results of the first operation in respect of migrants in accordance with such age statistics as are available in respect of them ; and (3) completing the table by the addition of the population at age 0–1, represented by the survivors at the middle of 1921 of the births which occurred between 30th June, 1920, and 30th June, 1921. By this method full allowance is made for the wide fluctuations in the birth-rate which have occurred during recent years.

Local Populations.—Local populations for the year 1921 have naturally been obtained primarily by reference to the distribution given by the Census. First of all, however, it was found necessary to modify the latter in respect of certain abnormalities introduced by reason of the special circumstances in which the Census was taken. The Census was originally planned to have been taken in

April, but, as indicated in the Preliminary Report, this intention was frustrated by the industrial situation which arose at that time, and it was not found possible to carry out the enumeration until 19th June. While the latter date avoided the recognised programme of industrial holidays, some holiday movement was, largely owing to the abnormally fine weather, then in progress, and this was duly reflected in the population figures by the inclusion in the case of the more popular holiday resorts of varying and sometimes large proportions of visitors. For statistics of births and deaths classified according to areas of residence, comparisons based upon such populations would have been misleading; and for the purpose of these statistics it clearly became necessary to undertake an adjustment of the figures. The procedure adopted is indicated in the following paragraphs.

Examination of the data available indicated that the most satisfactory basis of adjustment would be provided by the information given in the second column of the Census schedules, in which persons not normally resident with the household were asked to describe themselves as visitors. Caution was required in the application of these returns, however, for it was seen that some visitors had escaped recognition through having been scheduled as boarders or otherwise, while in other cases the visitors so described included persons whose residence was within the locality itself or persons who had no permanent residence elsewhere and who would not, therefore, fall to be deducted in the process of adjustment.

In areas where the percentage of the population returned as visitors was small in itself, those returns were adopted without further refinement, since any loss of precision measured in relation to the whole population of the area was seen to be of little moment. But in some other areas, including most of the more popular holiday resorts, where the proportion of recorded visitors exceeded 10 per cent. of the enumerated populations, special enquiries were addressed to the local Census Officers with the object of ascertaining precisely whether the enumeration had been attended by any special circumstances tending towards the understatement or overstatement of the number of visitors. The qualitative measure of any error thus ascertained was supplemented by a detailed examination of Census schedules in respect of a few typical areas from which, with the aid of the statements of workplace contained thereon, it was found possible to gain some idea of the limits within which discrepancies would range. From the combined results of these processes, and with some regard to the returns of the distribution of food rationing cards in November, 1919, a means of making a closer approximation, where necessary, to the actual number of visitors was found possible, and was applied in correction of the visitor return in 69 local areas.

For the complementary process of restoring the visitor population to the appropriate areas of residence, statistics on which the

several contributions of individual districts might be estimated have not so far been available, and in their absence a flat rate distribution based upon the local populations, after deducting visitors, has been adopted throughout the country.* But the examination of this feature has not been exhausted, and when the detailed examination of the Census material has been completed it may be possible to provide differential treatment for individual areas. It may be observed at this stage, however, that the total recorded Census visitors for the whole country numbered only 2·6 per cent. of the enumerated population and that of these more than half were scattered throughout inland areas and would to a great extent be present whenever the Census might be taken: any error, therefore, arising through the adoption of an arbitrary method of redistribution must generally be unimportant and can have little effect upon the corresponding birth, marriage, or death rates. Further, a re-distribution on the lines indicated has the effect of confining all material variation to the relatively small number of holiday resorts, the bulk of the populations thus remaining in harmony with the Census figures.

The populations of hospitals, infirmaries, asylums, etc., remain credited to the areas of enumeration, notwithstanding that some persons so included may, on a residence classification, more properly be assigned elsewhere.

The populations of each of the countries of the United Kingdom, as furnished by their respective Registrars-General, are shown for each year from 1872 in Table A on p. 2 (Part II), and the 1921 estimates of the resident populations of each of the local government divisions of England and Wales, together with County aggregates, in Table 14 on p. 62 (Part I), and Table E on p. 7 (Part II).

MARRIAGES.

The Marriage statistics of 1921 together with comparative figures for previous years are given in Table B on p. 4 of Part II.

The marriages registered in England and Wales during the year 1921 numbered 320,852, corresponding to a rate of 16·9 persons married per 1,000 of the population of all ages and conditions. From the comparable figures of previous years given in Tables C and D it will be seen that the phenomenal rise in the marriage-rates which has been recorded in the past four years following the termination of the war and which represented an increase from 13·8 per 1,000 in 1917, the lowest rate recorded in

* The resident population of the Administrative County of London obtained in this way was distributed amongst the constituent Metropolitan Boroughs in proportion to their total enumerated populations.

this country for any single year, to 20·2 per 1,000, the highest so recorded, in 1920 came to an end in the latter year, the marriages of the current year showing a decline in numbers of 59,130 or nearly 16 per cent. of the number recorded in 1920. The decline apparently commenced in the fourth quarter of 1920, but it was not immediately continued in 1921 for though the marriages in the first quarter of 1921 were less than those of the last quarter of 1920, it must be remembered that first quarter marriages are normally fewer than those of either of the later quarters; it will be seen from Table D that the first quarter's marriages of 1921 correspond to an annual rate of 16·3 per 1,000 which is the highest on record for the first quarter of any year. From and after the second quarter the rates are markedly lower than those of the corresponding quarters of 1920. But though these figures do mark a decline, which is further continued in the year 1922, the marriage-rate for 1921 as a whole is high in comparison with rates of earlier years and has only been exceeded on three occasions since 1874, viz., in 1915 and in 1919 and 1920; the fall coincides with a period of increasing trade depression and unemployment, but it is impossible to say how far it was influenced by this factor as there was bound sooner or later to be some reaction following a wave of unusual size due to the heaping up of marriages which were delayed or postponed during the war.

The proportion of marriageable persons in the population at different dates is not, however, a fixed one, and a more accurate measure would be given by a rate in terms of the marriageable population only.

Marriage-rates so calculated were shown for each year up to 1919 in Table 3 of the Report for that year. The difficulty of estimating the proportion of males and females who are single, married and widowed at each age naturally increases with each year which elapses since these proportions were last ascertained by a census; and at present this difficulty has been greatly increased, as regards males, by the incidence of the high mortality of the war between the unmarried and married, and generally by the abnormal fluctuations of the marriage-rate which the war has caused. In view of these considerations, and of the fact that any estimates made would be subject to early and perhaps great alteration in the light of the 1921 census, the attempt to keep Table C up to date in this matter has been abandoned. It is clear, however, from such of the census data as have been tabulated that the events of the past decade have greatly increased the proportion of marriageable females to marriageable males, particularly at the ages at which marriages are commonest, and that while the present proportions remain, the marriage-rate for females must evidently remain low in relation to that for males.

First Marriages and Re-marriages.—Table LI gives a general view of the changes in the proportions of first marriages and re-marriages since the year 1876.

Table LI.—England and Wales, 1876–1921 : Proportions of First Marriages and Re-marriages in 1,000 Marriages.

Period.	Men.		Women.		Bachelors who married.		Widowers who married.	
	Bachelors.	Widowers.	Spinsters.	Widows.	Spinsters.	Widows.	Spinsters.	Widows.
1876–80 ..	364	136	902	98	820	44	82	54
1881–85 ..	874	126	911	89	834	40	77	49
1886–90 ..	881	119	917	83	844	37	73	46
1891–95 ..	887	113	921	79	851	36	70	43
1896–1900 ..	904	96	931	69	871	33	60	36
1901–05 ..	911	89	933	67	877	34	56	33
1906–10 ..	916	84	938	62	884	32	54	30
1911–15 ..	921	79	936	64	886	35	50	29
1916–20 ..	903	97	895	105	838	65	57	40
1911 ..	918	82	939	61	887	31	52	30
1912 ..	918	82	938	62	886	32	52	30
1913 ..	919	81	936	64	885	34	51	30
1914 ..	920	80	934	66	884	36	50	30
1915 ..	928	72	934	66	890	38	44	28
1916 ..	908	92	915	85	860	48	55	37
1917 ..	899	101	900	100	841	58	59	42
1918 ..	901	99	894	106	837	64	57	42
1919 ..	897	103	875	125	816	81	59	44
1920 ..	907	93	894	106	839	68	55	38
1921 ..	911	89	909	91	855	56	54	35

It will be seen from the above figures that the decrease in the marriages of the year has been proportionately much heavier amongst re-marriages than amongst first marriages, the fall being most marked of all in those marriages in which the bride was a widow.

The tendency of the several proportions of bachelors to widowers and spinsters to widows to return towards pre-war proportions was begun in 1920 and has thus been continued in 1921 ; but the extent of the movement during the past year has not been quite so marked as it was from 1919 to 1920, the first year following the point at which the proportions of widower and widow marriages reached the maximum attained in recent years. The difficulty of making valid comparisons, however, without definite knowledge of the several numbers of the single, married and widowed of each sex in the general population is illustrated in the figures for females where the proportion of widow marriages which, though having the substantial fall from 10·6 per cent. in 1920 to 9·1 per cent. in 1921 following an even greater reduction from 1919 to 1920, is yet very remote from the pre-war proportions and must remain so until the abnormal number of widows at the younger ages has disappeared.

Age at Marriage.—Until the results of the 1921 census are available for determining the numbers of marriageable men and women in the population at different ages it would be unsafe to attempt to show their marriage rates by age, but meanwhile Table LIII shows roughly the changes which have taken place in the ages of the contracting parties themselves, during periods subsequent to 1886, including the rather special variations which occurred during and since the war. The latter were examined in some detail in the Annual Report of the Registrar General for 1920, and need not be discussed at length here.

In Table LII are shown the mean ages at marriage calculated from the returns in which age is recorded, the proportion of marriages in recent years without statement of the ages of the contracting parties being small and not likely to affect the calculation of the mean age or its comparative value for recent years to any particular extent.

The mean age at marriage gradually increased from 1896 to 1918 for bachelors and spinsters, and also, with some fluctuations, for widowers. (The apparent reduction in 1914 of the mean ages of bachelors and spinsters was entirely due to the more precise method of calculation then introduced, which reduced them from that date onwards by about 0·18 of a year, but scarcely affected the calculation for the widowed.) In the case of widows the increase did not set in till 1903 and its highest point was reached in 1912.

For bachelors and spinsters the fall which occurred between 1918 and 1920 has been continued in a very slight degree in 1921, while for widows, in respect of whom the highest average age was reached in 1912, the fall reached a minimum in 1919, and has since shown an upward tendency. The average age of widower bridegrooms increased steadily up to 1918, after which there was a considerable drop in the following year followed by a slight increase in 1920 and a still greater rise in 1921.

Table LIII shows the proportions of marriages of bachelors, spinsters, widowers and widows during 1921 and earlier years in 12 age groups and enables the age variations generally indicated by the movements of the mean age to be more definitely located. Thus the slight decrease in the mean age for bachelors is shown to be due to the larger proportion of marriages at ages 20–25, the present figure standing higher than any recorded since the period 1906–1910. With spinsters, though there has been a marked decline in numbers at all ages, as of course there has been amongst all bridegrooms and brides, the proportions at ages below 20 show an increase, the total proportion at these ages being higher now than in any year since 1900. The increase at these ages has been attained at the expense of the proportions shown for the age period 20–40.

Table LII.—England and Wales : Mean Ages at Marriage,
1896–1921.

Males.

Year.	All Bridegrooms.	All Bachelor Bridegrooms.	All Widower Bridegrooms.	Bachelors with Spinsters.	Bachelors with Widows.	Widowers with Spinsters.	Widowers with Widows.
1896–1900	28·38	26·63	44·73	26·35	34·12	41·74	49·72
1901–05	28·52	26·90	45·08	26·62	34·09	42·28	49·88
1906–10	28·76	27·19	45·71	26·93	34·70	42·95	50·64
1911–15	29·01	27·49	46·62	27·18	35·73	43·80	51·37
1916–20	29·77	27·92	46·84	27·42	34·78	44·42	50·25
1911	29·03	27·46	46·42	27·19	35·19	43·49	51·46
1912	29·12	27·56	46·77	27·27	35·75	43·96	51·67
1913	29·11	27·56	46·65	27·25	35·68	43·91	51·35
1914	28·94	27·40	46·66	27·05	35·90	43·79	51·39
1915	28·87	27·49	46·61	27·12	36·15	43·86	50·98
1916	29·70	27·93	47·32	27·47	36·20	44·79	51·07
1917	30·04	28·04	47·71	27·52	35·63	45·22	51·23
1918	30·08	28·14	47·74	27·59	35·43	45·38	50·88
1919	29·81	27·99	45·72	27·46	33·36	43·40	48·85
1920	29·20	27·51	45·73	27·04	33·28	43·31	49·24
1921	29·19	27·48	46·60	27·03	34·35	44·06	50·57

Females.

Year.	All Brides.	All Spinster Brides.	All Widow Brides.	Spinsters with Bachelors.	Spinsters with Widowers.	Widows with Bachelors.	Widows with Widowers.
1896–1900	26·21	25·14	40·70	24·62	32·64	35·96	44·99
1901–05	26·36	25·37	40·37	24·88	32·99	35·76	45·09
1906–10	26·59	25·63	41·06	25·14	33·63	36·51	45·82
1911–15	26·77	25·75	41·65	25·27	34·23	37·40	46·57
1916–20	27·14	25·81	38·66	25·24	34·30	34·73	44·74
1911	26·80	25·81	41·74	25·32	34·13	37·01	46·63
1912	26·84	25·85	41·89	25·36	34·25	37·44	46·69
1913	26·80	25·78	41·57	25·29	34·23	37·22	46·59
1914	26·68	25·61	41·64	25·12	34·28	37·53	46·57
1915	26·75	25·71	41·42	25·28	34·28	37·78	46·39
1916	27·17	25·91	40·73	25·36	34·58	36·79	45·85
1917	27·27	25·89	39·66	25·28	34·54	35·40	45·48
1918	27·29	25·92	38·84	25·33	34·59	34·82	44·86
1919	27·16	25·81	36·69	25·24	33·77	33·07	43·36
1920	26·79	25·54	37·36	24·99	34·02	33·56	44·14
1921	26·73	25·52	38·83	24·95	34·40	34·83	45·26

Table LIII.—England and Wales, 1886–1921 :
Widows at Various Ages per

Period.	All Ages.	Under 18 Years.	18–	19–	20–	21–	25–	30–	35–	40–	45–	50–	55 and up.	Age not Stated.
<i>Bachelors.</i>														
1886–90..	1,000	0	4	20	47	424	309	96	33	13	6	3	2	43
1891–95..	1,000	0	3	17	43	415	333	108	37	14	6	3	2	19
1896–1900	1,000	0	3	15	39	411	346	110	39	15	6	3	2	11
1901–05..	1,000	0	3	13	35	390	360	122	41	16	7	3	2	8
1906–10..	1,000	0	3	11	30	370	372	132	46	17	8	3	2	6
1911–15..	1,000	0	3	12	28	350	373	139	53	21	9	4	3	5
1916–20..	1,000	1	6	13	27	332	354	144	62	30	15	6	4	6
1911 ..	1,000	0	3	11	28	350	380	139	50	19	9	3	3	5
1912 ..	1,000	0	3	11	28	347	378	140	52	20	9	4	3	5
1913 ..	1,000	0	3	12	30	348	372	141	53	21	9	4	3	4
1914 ..	1,000	0	3	13	29	350	367	139	54	23	10	4	3	5
1915 ..	1,000	0	2	10	25	353	370	138	57	23	10	4	3	5
1916 ..	1,000	1	4	11	24	335	355	144	65	31	14	6	4	6
1917 ..	1,000	2	7	13	25	329	350	143	64	33	17	7	4	6
1918 ..	1,000	2	8	13	25	324	351	141	63	33	20	8	5	7
1919 ..	1,000	1	6	14	28	320	353	151	66	30	14	6	4	7
1920 ..	1,000	1	4	15	32	347	356	138	56	24	12	5	4	6
1921 ..	1,000	1	4	15	33	350	356	136	55	24	12	5	4	5
<i>Spinsters.</i>														
1886–90..	1,000	9	37	72	97	417	219	62	23	10	5	2	1	46
1891–95..	1,000	7	31	66	94	425	241	70	25	11	5	2	1	22
1896–1900	1,000	6	27	59	89	434	253	74	26	11	5	2	1	13
1901–05..	1,000	5	23	53	82	428	272	79	28	12	5	2	1	10
1906–10..	1,000	5	21	48	75	420	284	87	30	12	6	2	2	8
1911–15..	1,000	6	23	47	70	402	292	94	34	14	7	3	2	6
1916–20..	1,000	6	23	48	72	402	275	94	39	17	9	4	3	8
1911 ..	1,000	5	21	46	70	404	298	93	32	13	7	3	2	6
1912 ..	1,000	5	22	47	71	399	295	95	34	14	7	3	2	6
1913 ..	1,000	5	25	50	72	397	290	95	34	14	7	3	2	6
1914 ..	1,000	7	25	50	71	399	286	95	35	14	7	3	2	6
1915 ..	1,000	5	21	45	68	407	291	95	36	14	7	3	2	6
1916 ..	1,000	5	21	46	68	402	278	100	41	18	9	3	2	7
1917 ..	1,000	6	22	48	72	400	273	95	41	19	9	4	3	8
1918 ..	1,000	5	22	45	72	404	274	93	40	19	10	4	3	9
1919 ..	1,000	5	22	49	71	403	277	95	38	17	9	4	2	8
1920 ..	1,000	6	25	52	77	407	276	87	34	15	8	3	3	7
1921 ..	1,000	7	27	54	76	406	274	86	33	15	8	4	3	7

The rapid increase in the proportion of young to total widowers marrying which was recorded for the years 1919 and 1920, has now given place to a decline which is marked at each age period below 40. This proportion, which had been declining for many years, reached a minimum in 1918. Since then it increased so quickly that the proportion married at these ages jumped from 25·6 per cent. in 1918 to 35·5 per cent. in 1920, a proportion corresponding to the period about 1905, and is now down again to 32·7 per cent. for the current year. The case is different with widows. Here the decrease in the proportions is in respect of ages below 30 only and is a continuation of a similar reduction in 1920. The decrease in numbers of young widows married has checked the increase in the proportion of young to total widows marrying, which had been in progress since 1914. In 1886–1890 the widows less than 30 years of age who married formed 15 per cent. of the whole. This proportion gradually fell till in 1914 they formed only 11 per cent. From

Marriages of Bachelors, Spinsters, Widowers and 1,000 Marriages at All Ages.

Period.	All Ages.	Minors	21-	25-	30-	35-	40-	45-	50-	55-	60-	65-	70 and up.	Age not Stated.
<i>Widowers.</i>														
1886-90..	1,000	0	13	81	133	151	139	120	94	70	53	27	15	104
1891-95..	1,000	0	12	76	132	153	148	126	106	74	55	29	18	71
1896-1900	1,000	0	10	73	131	158	150	136	109	84	56	30	19	44
1901-05..	1,000	0	10	68	130	155	152	136	116	83	62	32	20	36
1906-10..	1,000	0	8	61	123	153	152	141	119	90	62	37	24	30
1911-15..	1,000	0	7	53	109	151	150	146	125	97	68	41	30	23
1916-20..	1,000	0	7	54	105	138	151	155	130	101	70	39	26	24
1911 ..	1,000	0	7	56	115	155	146	144	119	93	68	40	33	24
1912 ..	1,000	0	7	55	108	150	145	142	125	99	68	45	33	23
1913 ..	1,000	0	8	51	109	149	150	145	125	97	69	42	30	25
1914 ..	1,000	0	7	52	108	148	152	145	126	97	70	40	31	24
1915 ..	1,000	0	6	50	105	149	155	154	129	98	68	39	26	21
1916 ..	1,000	0	6	43	94	130	162	163	133	105	73	40	29	22
1917 ..	1,000	0	6	43	86	125	152	167	141	107	79	42	27	25
1918 ..	1,000	0	5	44	84	123	149	173	145	108	74	43	26	26
1919 ..	1,000	0	8	62	122	154	151	144	121	92	63	35	24	24
1920 ..	1,000	0	10	69	128	148	141	134	118	97	66	39	25	25
1921 ..	1,000	0	8	61	116	142	143	138	120	99	73	46	31	23
<i>Widows.</i>														
1886-90..	1,000	1	30	119	164	173	145	117	73	46	26	10	3	93
1891-95..	1,000	1	27	115	170	177	157	119	78	47	29	10	4	66
1896-1900	1,000	1	26	113	175	188	157	127	81	50	28	11	3	40
1901-05..	1,000	1	28	122	182	190	158	118	78	47	29	11	4	32
1906-10..	1,000	1	23	106	177	192	160	129	82	52	30	14	6	28
1911-15..	1,000	1	21	98	167	193	171	135	85	51	32	16	11	19
1916-20..	1,000	3	67	189	191	162	126	98	64	41	24	13	6	16
1911 ..	1,000	0	22	102	164	192	166	135	82	54	32	17	13	21
1912 ..	1,000	1	19	95	166	195	166	134	87	54	34	17	12	20
1913 ..	1,000	1	21	102	170	195	164	133	82	53	32	16	11	20
1914 ..	1,000	1	20	93	170	196	176	133	84	51	31	15	11	19
1915 ..	1,000	1	22	98	165	194	180	137	87	47	30	15	8	16
1916 ..	1,000	3	41	119	161	183	166	127	84	50	26	16	8	16
1917 ..	1,000	3	64	149	164	167	145	116	76	50	27	15	7	17
1918 ..	1,000	3	74	173	172	158	132	108	72	44	27	13	7	17
1919 ..	1,000	4	86	228	204	156	106	81	52	34	19	10	5	15
1920 ..	1,000	2	59	221	221	159	109	82	53	37	22	13	6	16
1921 ..	1,000	1	37	179	222	178	122	93	62	42	25	15	8	16

this date the proportion rose rapidly to reach a maximum of 32 per cent. in 1919, but it had fallen to 28 per cent. in 1920 and now stands at 22 per cent.—a figure still, it will be seen, greatly in excess of any recorded before the war.

Marriages of Minors.—For both sexes, but much more for females than for males, the proportion of marriages under full age has increased in 1921. The proportion of marriages under age was at its maximum in 1874 for both sexes, and afterwards fell continuously till 1911-1915, during which period it rose somewhat for both sexes until the outbreak of war. This depressed it considerably, the figure for males reaching a minimum of 34·8 in 1915, since when it has continuously increased to 48·2 in 1921, but the proportion remained low for females until its sudden rise in 1920. For both sexes, however, these proportions are higher than they have been since 1901-1905, though they remain very low as compared with those of 40 years ago.

Table LIV.—England and Wales, 1876–1921 : Minors Married per 1,000 Marriages at All Ages.

	Husbands.	Wives.		Husbands.	Wives.
1876–80 ..	77·8	217·0	1912 ..	39·2	135·4
1881–85 ..	73·0	215·0	1913 ..	42·1	143·8
1886–90 ..	63·2	200·2	1914 ..	41·6	142·5
1891–95 ..	56·2	182·6	1915 ..	34·8	129·8
1896–1900..	51·2	168·0	1916 ..	36·2	129·1
1901–05 ..	46·3	153·1	1917 ..	41·7	134·2
1906–10 ..	40·3	139·4	1918 ..	42·6	129·0
1911–15 ..	39·2	136·6	1919 ..	43·7	129·4
1916–20 ..	42·6	133·3	1920 ..	46·8	142·9
			1921 ..	48·2	149·2

The number of males and females marrying under age, and at six other groups of ages, with distinction of the marital condition of the parties, is shown for each registration county in Table N on p. 73 of Part II. From these figures and those of Table LV below, it appears that local customs with regard to early marriage are little changed from those indicated by pre-war returns. Generally speaking, the highest proportions of persons marrying under age are found, as in 1914, the latest year not obviously affected by the war, in mining and industrial counties ;

Table LV.—Registration Counties : Marriages of Minors per 1,000 Total Marriages in 1914 and 1921:

Registration Counties.	Males.		Females.	
	Ratio per 1,000 Marriages, 1914.	Ratio per 1,000 Marriages, 1921.	Ratio per 1,000 Marriages, 1914.	Ratio per 1,000 Marriages, 1921.
England and Wales	42	48	142	149
London	34	40	115	127
Surrey	22	31	99	110
Kent	28	36	122	152
Sussex	28	35	93	121
Hampshire	21	32	113	144
Berkshire	19	36	96	123
Middlesex	30	36	102	117
Hertfordshire	33	42	96	129
Buckinghamshire	35	34	114	119
Oxfordshire	32	29	85	113
Northamptonshire	42	44	125	131
Huntingdonshire	17	52	83	160
Bedfordshire	51	48	127	134
Cambridgeshire	47	53	129	147
Essex	29	36	121	125
Suffolk	40	42	132	155

Table LV.—Registration Counties : Marriages of Minors per 1,000
Total Marriages in 1914 and 1921—*continued*.

Registration Counties.	Males.		Females.	
	Ratio per 1,000 Marriages, 1914.	Ratio per 1,000 Marriages, 1921.	Ratio per 1,000 Marriages, 1914.	Ratio per 1,000 Marriages, 1921.
Norfolk	40	48	124	136
Wiltshire	24	30	105	128
Dorsetshire	25	31	97	124
Devonshire	23	37	104	126
Cornwall	36	35	129	131
Somersetshire	27	28	87	112
Gloucestershire	30	32	83	110
Herefordshire	24	25	103	91
Shropshire	23	30	91	119
Staffordshire	60	65	184	177
Worcestershire	51	55	140	135
Warwickshire	47	51	145	143
Leicestershire	60	58	141	148
Rutlandshire	30	16	129	93
Lincolnshire	42	62	179	183
Nottinghamshire	71	75	202	205
Derbyshire	50	62	184	177
Cheshire	33	43	117	130
Lancashire	46	51	136	130
Yorkshire, West Riding	60	61	184	170
,, East Riding (with York)	48	56	187	180
,, North Riding	46	58	182	198
Durham	61	80	243	250
Northumberland	43	58	184	203
Cumberland	45	59	151	172
Westmorland	24	31	82	108
Monmouthshire	43	61	205	213
Glamorganshire	46	56	192	209
Carmarthenshire	39	54	166	171
Pembrokeshire	43	42	116	131
Cardiganshire	24	16	76	76
Brecknockshire	38	32	131	135
Radnorshire	45	8	89	123
Montgomeryshire	16	21	89	106
Flintshire	12	27	76	106
Denbighshire	26	35	99	129
Merionethshire	20	13	67	90
Carnarvonshire	10	14	63	102
Anglesey	12	13	51	111

for men the ratio is greatest in Durham, where it reaches 8·0 per cent., as compared with 4·8 per cent. for the whole country, followed by Nottingham, Stafford, Derby and the somewhat exceptional agricultural county of Lincoln. For women, in respect of whom the mean ratio is 14·9 per cent., the proportion recorded for Durham is as high as 25·0 per cent., while in Glamorgan, Monmouth, Nottingham and Northumberland it exceeds 20·0 per cent. On the other hand, in residential and

agricultural counties the figures are normally well below the mean, the lowest generally being those recorded for the southern counties of England and the northern counties in Wales.

Fluctuations of the Marriage-rate in different Sections of the Country.—The movements of the marriage-rate during the war have been traced in Table LVI for the four geographical sections into which the country has been divided for a number of purposes in these Reports. The limits of the four sections are indicated in a footnote.* The determination of marriage-rates for localities is not wholly satisfactory for several reasons. In a large proportion of cases the district of registration is the district of residence of only one of the parties, and in some cases of neither. This difficulty, however, is probably of less moment in comparisons between large sections of the country than between smaller adjacent localities. Again, it has only been possible till now to tabulate marriages by registration areas, and the available estimates of population refer to administrative areas. The populations upon which the rates in the table are based have, therefore, been derived from the estimated populations of the corresponding aggregates of administrative counties and county boroughs on the assumption of the maintenance of a constant ratio between the population of the registration and administrative areas. This is not absolutely correct, but the resultant error is too small to have any appreciable effect upon the rates quoted.

It will be seen that, following some disturbance in the geographical incidence of the marriage-rate during the years 1915–1920, in three of the four sections of the country shown in Table LVI, the persons married per 1,000 population in 1921 bear approximately the same ratio to the corresponding rate for England and Wales as they did in 1914; the rates for the northern and southern groups of counties are between 2 and 3 per cent. above and that for the midlands about $3\frac{1}{2}$ per cent.

* The "North" includes the administrative counties and county boroughs corresponding to the registration counties in the eighth, ninth, and tenth "registration divisions" of the Registrar-General, *i.e.*, Lancashire, Cheshire, and Yorkshire, and counties north of them. The "South" includes England south of the Thames, with the whole of the County of London and the five south-western counties forming the first, second, and fifth registration divisions. "Wales" corresponds to the eleventh or Welsh registration division and so includes Monmouthshire. All the rest of the country corresponding to the third, fourth, sixth, and seventh registration divisions, is included in the Midland area. The counties in the four areas are as follows:—

North.	Midlands.	South.	Wales.	
Cheshire. Lancashire. Yorks, West Riding ,, East Riding. ,, North Riding. Durham.	Middlesex. Hertfordshire. Buckinghamshire. Oxfordshire. Northamptonshire. Soke of Peterborough.	Gloucestershire. Herefordshire. Shropshire. Staffordshire. Worcestershire. Warwickshire.	London. Surrey. Kent. Sussex, East. ,, West. Southampton.	Monmouthshire. Glamorganshire. Carmarthenshire. Pembrokeshire. Cardiganshire. Brecknockshire.
Northumberland. Cumberland. Westmorland.	Huntingdonshire. Bedfordshire. Cambridgeshire. Isle of Ely. Essex. Suffolk, East. ,, West. Norfolk.	Leicestershire. Rutlandshire. Lincolnshire, Parts of Holland. ,, Kesteven. ,, Lindsey. Nottinghamshire. Derbyshire.	Isle of Wight. Berkshire Wiltshire. Dorsetshire. Devonshire. Cornwall. Somersetshire.	Radnorshire. Montgomeryshire. Flintshire. Denbighshire. Merionethshire. Carnarvonshire. Anglesey.

below the mean rate for the whole country. In Wales the marriage-rate, which during the war was from 10 to 15 per cent. below the mean, showed a progressive increase between 1918 and 1920, but has now dropped to a point nearly 8 per cent. below the average.

Table LVI.—England and Wales, 1914–1921 : Marriages and Marriage-rates of each Year in Geographical Sections of the Country.

	North.	Midlands.	South.	Wales.	England and Wales.				
Numbers of Marriages Registered.									
1914 ..	100,926	87,695	85,728	20,052	294,401				
1915 ..	115,694	109,844	113,868	21,479	360,885				
1916 ..	90,287	84,895	87,322	17,342	279,846				
1917 ..	83,151	78,761	80,356	16,587	258,855				
1918 ..	92,381	87,798	89,928	17,056	287,163				
1919 ..	125,863	111,180	107,971	24,397	369,411				
1920 ..	136,443	114,942	102,930	25,667	379,982				
1921 ..	110,864	97,218	91,831	20,939	320,852				
Persons Married per 1,000 Population.									
Marriage-rate.					Rate per cent. of that in England and Wales.				
	North.	Midlands.	South.	Wales.	England and Wales.	North	Midlands.	South.	Wales.
1914 ..	16.30	15.25	16.29	15.76	15.93	102.3	95.7	102.3	98.9
1915 ..	18.33	18.79	21.95	16.66	19.37	94.6	97.0	113.3	86.0
1916 ..	14.19	14.45	16.69	13.36	14.87	95.4	97.2	112.2	89.8
1917 ..	13.02	13.30	15.62	12.39	13.78	94.5	96.5	113.4	89.9
1918 ..	14.55	14.84	17.39	12.96	15.31	95.0	96.9	113.6	84.7
1919 ..	19.85	18.91	20.80	18.25	19.71	100.7	95.9	105.5	92.6
1920 ..	21.58	19.56	19.66	19.37	20.20	106.8	96.8	97.3	95.9
1921 ..	17.36	16.37	17.39	15.63	16.94	102.5	96.6	102.7	92.3

Table LVII gives the marriage-rate of each registration county in 1921, and its percentage variation from the rate for 1914. With the reduction in the general marriage-rate from 1920 to 1921, the percentage increases in the 1921 county rates over those for 1914, are naturally lower than they were last year. The fall, however, has been least in the rural counties, the highest

percentage increases over 1914 now being found in Huntingdon (ratio, 146 per cent.), Westmorland (132 per cent.), Merioneth (127 per cent.), Carnarvon (125 per cent.), Flint (123 per cent.), Oxford (122 per cent.), Hereford (121 per cent.), Somerset (121 per cent.) and Sussex (120 per cent.). In eight counties are the rates lower than they were in 1914, viz., Anglesey (85 per cent.), Warwick (90 per cent.), Monmouth (92 per cent.), Pembroke (94 per cent.), Carmarthen (95 per cent.), Glamorgan (95 per cent.), Durham (97 per cent.) and Northumberland (98 per cent.), amongst which the prominence of mining areas will be associated with the severe depression in that industry accompanied as it was by a coal strike lasting for several months during the earlier part of the year.

Table LVII.—Registration Counties : Persons Married per 1,000 Population, 1901–10, 1914 and 1921.

Registration County.					Mean- rate 1901–10.	1914.	1921.	Rate in 1921 per cent. of 1914.
England and Wales					15·5	15·9	16·9	106
London					17·5	19·2	19·4	101
Surrey					13·4	13·6	15·4	113
Kent					14·0	14·6	15·5	106
Sussex					13·5	12·7	15·3	120
Hampshire					15·1	14·9	16·5	111
Berkshire					14·3	13·8	15·7	114
Middlesex					13·4	14·2	16·1	113
Hertfordshire					12·9	13·6	15·2	112
Buckinghamshire					13·5	13·0	15·2	117
Oxfordshire					14·1	13·1	16·0	122
Northamptonshire					14·4	15·1	17·1	113
Huntingdonshire					14·0	11·9	17·4	146
Bedfordshire					14·1	15·1	16·6	110
Cambridgeshire					14·1	14·2	16·6	117
Essex					13·8	14·6	16·8	115
Suffolk					13·8	14·0	15·9	114
Norfolk					13·9	13·7	16·1	118
Wiltshire					14·4	14·4	16·8	117
Dorsetshire					13·9	14·0	16·2	116
Devonshire					15·3	14·7	16·7	114
Cornwall					14·0	14·3	14·8	103
Somersetshire					13·7	13·5	16·4	121
Gloucestershire					15·2	16·0	16·7	104
Herefordshire					13·0	12·5	15·1	121
Shropshire					13·3	13·3	15·7	118
Staffordshire					15·6	16·5	16·5	100
Worcestershire					14·5	15·0	15·7	105
Warwickshire					16·4	17·1	15·4	90
Leicestershire					15·5	16·2	18·4	114
Rutlandshire					12·6	12·4	13·7	110
Lincolnshire					15·5	15·4	16·5	107

Table LVII.—Registration Counties : Persons Married per 1,000 Population, 1901–1910, 1914 and 1921—*continued*.

Registration County.	Mean- rate 1901–10.	1914.	1921.	Rate in 1921 per cent. of 1914.
Nottinghamshire	16·4	16·4	17·2	105
Derbyshire	15·6	15·5	16·6	107
Cheshire	14·5	15·4	16·1	105
Lancashire	16·4	16·2	17·8	110
Yorkshire, West Riding	15·9	16·1	17·4	108
„ East Riding (with York)	15·5	16·5	18·1	110
„ North Riding	15·2	15·6	15·8	101
Durham	16·2	17·7	17·2	97
Northumberland	15·7	17·3	16·9	98
Cumberland	14·7	15·3	16·3	107
Westmorland	13·6	13·4	17·7	132
Monmouthshire	15·6	16·4	15·1	92
Glamorganshire	16·3	17·2	16·4	95
Carmarthenshire	14·8	16·1	15·3	95
Pembrokeshire	14·8	16·0	15·0	94
Cardiganshire	12·1	11·5	13·4	117
Brecknockshire	15·9	14·7	15·8	107
Radnorshire	12·8	13·3	14·8	111
Montgomeryshire	13·1	12·4	14·2	115
Flintshire	11·8	11·7	14·4	123
Denbighshire	14·0	13·6	15·1	111
Merionethshire	12·1	11·5	14·6	127
Carnarvonshire	13·5	12·2	15·2	125
Anglesey	12·4	14·4	12·3	85

Buildings in which Marriages may be Solemnized.—At the end of the year 1921 the numbers of churches or chapels of the Established Church and of registered buildings in which marriages could be legally solemnized were as follows :—

Established Church	16,156
All other Religious Denominations	18,105
Total	34,261

The increase upon the numbers at the end of the previous year was :—Established Church, 16 ; other religious denominations, 247. The number of these buildings belonging to the various denominations is shown for each registration county in Table Q.

By the Acts 15 and 16 Vict. c. 36, and 18 and 19 Vict. c. 81, it was enacted that all places of religious worship not being churches or chapels of the Established Church, should, if the congregations desired, be certified to the Registrar-General, certification for public worship being a necessary preliminary to the registration of a building for the solemnization of marriages.

The number of places of meeting for religious worship on the official register on 31st December, 1921, and the number of buildings registered for the solemnization of marriages, are shown in the following table.

Table LVIII.

Denomination.	Buildings certified to the Registrar- General as meeting- places for Religious Worship.	Buildings registered for the Solemnization of Marriages.*
Roman Catholics	1,560	1,485
Wesleyan Methodists	7,626	4,273
Congregationalists	3,364	3,056
Baptists	3,188	2,819
Primitive Methodists	4,360	1,997
United Methodist Church	1,980	1,262
Calvinistic Methodists	1,299	1,010
Presbyterians	448	451
Unitarians	184	199
New Church	55	60
Catholic Apostolic Church	70	48
Countess of Huntingdon's Connexion	47	42
Salvation Army	1,136	186
Society of Friends	431	†
Jews	259	†
Other Denominations	3,335	1,217
All Denominations	29,342	18,105

* Of these buildings nearly 1,000 were certified before 1852, as Places of Meeting for Religious Worship, to some other Authority than the Registrar-General and therefore are not included in the preceding column.

† It is not necessary for buildings to be registered for the solemnization of Quaker or Jewish marriages. Under section 31 of the Births, Deaths, and Marriages Registration Act (1836) Registering Officers of the Society of Friends and Secretaries of Jewish Synagogues who have been certified to the Registrar-General record the marriages in each case.

The Marriage Act, 1898, provided that under specified conditions marriages might be solemnized in registered buildings in the presence of duly authorized persons without the attendance of a Registrar of Marriages. The governing bodies of some of the registered buildings have availed themselves of this provision, and at the end of the year 1921 the number of such buildings which had been brought under the operation of the Act, and so remained, was 4,837 out of the total of 18,105. The numbers of these buildings, and the denominations to which they belonged, were as follows :—

2,005	Wesleyan Methodists.
707	Congregationalists.
750	Primitive Methodists.
490	Baptists.
435	United Methodist Church.
119	Calvinistic Methodists.
331	other Denominations, and Unsectarian.
<u>4,837</u>	<u>All Denominations.</u>

Divorces and Remarriages of Divorced Persons.—The annual numbers of marriages dissolved or annulled are shown in Table LIX for each of the past eleven years and the seven preceding quinquennia.

During the year 1921, 3,458 divorces and 64 annulments were obtained, the number of persons involved being twice these figures or a total of 3,522 of each sex. The total is 14 per cent. in excess of that of 1920 which was itself nearly double that in the previous year and nearly treble that of any earlier date.

Table LIX.—England and Wales : Annual Number of Persons Divorced, and of Divorced Persons who Remarried, 1876–1921.

Period.		Number of Persons Divorced.	Annual Number of Divorced Persons who remarried.								
			Total.	Men.	Women.	Divorced men marrying spinsters.	Divorced men marrying widows.	Divorced men and women inter- marrying.	Divorced women marrying bachelors.	Divorced women marrying widowers.	
1876-80	..	Average	554	104	56	48	42	12	4	31	15
1881-85	..		671	128	68	60	53	12	6	42	15
1886-90	..		707	169	80	89	65	11	8	65	20
1891-95	..		744	214	110	104	89	15	12	75	23
1896-1900	..		980	345	172	173	138	24	20	126	37
1901-05	..		1,126	509	262	247	205	38	38	181	47
1906-10	..		1,247	693	356	337	276	53	54	253	57
1911-15	..		1,312	820	411	409	330	50	62	309	69
1916-20	..		3,115	1,264	683	581	525	127	62	439	111
1911..	..	1,160	702	365	337	300	39	52	265	46	
1912..	..	1,174	782	402	380	321	51	60	280	70	
1913..	..	1,154	854	415	439	322	51	84	337	60	
1914..	..	1,712	911	439	472	356	49	68	352	86	
1915..	..	1,360	852	434	418	352	59	46	311	84	
1916..	..	1,908	920	466	454	364	76	52	336	92	
1917..	..	1,956	791	429	362	350	62	34	268	77	
1918..	..	2,222	885	495	390	390	81	48	288	78	
1919..	..	3,308	1,352	708	644	538	142	56	510	106	
1920..	..	6,180	2,370	1,314	1,056	981	272	122	795	200	
1921..	..	7,044	2,878	1,592	1,286	1,182	330	160	939	267	

From Table LIX it will be seen that, with the increase in divorces, there has been a corresponding increase in the number of persons who on remarriage described themselves as divorced, but without a knowledge of the total number of divorced persons in the community in successive years it is not possible to say whether this indicates an increase or decrease in the marriage-rate of divorced persons. The increase in the remarriages has, however, proceeded more slowly than the corresponding increase in divorces, as might be expected, having regard to the time interval which must elapse between divorce and subsequent remarriage. And whereas a few years ago the numbers of divorced males and females remarrying were about equal, there is now considerable male excess. But it must be borne in mind that these numbers may understate the facts, owing to misdescription of status in the registers.

In Table P are given certain particulars concerning the marriages in respect of which suits for dissolution or annulment

were commenced during the year. These figures are in continuation of similar statistics which have hitherto appeared in the Civil Judicial Statistics, issued by the Home Office.

It will be seen from this table that the most frequent duration of marriage at which dissolution proceedings were begun is from 2-5 years, with an average of 215 for each of those years of duration, but the maximum is not strongly marked for in 75 per cent. of the cases the duration is in excess of 5 years, while in 44 per cent. the marriages have subsisted for 10 years or more. More than 40 per cent. of the marriages in question were childless and in a further 29 per cent. there was one child only.

BIRTHS.

The births registered during 1921 numbered 848,814, corresponding to a birth-rate of 22·4 per 1,000 of the population living.

The number of births quoted is 108,968 less than that for 1920, a diminution of 11·4 per cent., while the rate for the year is, with the exception of the years affected by the war, 1915-19, during which it was unusually depressed, the lowest on record. The fall is considerably greater than that recorded in Table C for any previous single year with the sole exception of the year 1917; this is not wholly surprising, since 1920 represented the climax of the temporary spurt in the birth-rate which immediately followed demobilization and which, as was indicated in the Registrar-General's Annual Report for 1920, had spent itself before the end of that year. With the exception of the war years referred to, the immediately preceding year, 1914, held the previous lowest record. The birth-rate in this country attained its highest values during the period 1865-80, when it exceeded 35 per 1,000 population; from that time it diminished by gradual and practically continuous stages to 23·8 in 1914, so that the rate of 22·4 for the current year, followed as it has been by a still further reduced rate for 1922, suggests that the direction of the forces so long operating towards the diminishing of the size of families has not been deflected by the deficiency of children which has resulted from the war period. It is, of course, too early yet to be able to say that the effect of this period has come to an end, but even if, with improved economic conditions, the birth-rate is given an upward tendency it is exceedingly unlikely that future rates even in conjunction with the high rate of 1920 can ever form more than a fractional compensation for the births lost during the war.

In Table D is shown the variation in the birth-rate during the four quarters of the year. The most noticeable feature is, perhaps, the lowness of the first quarter's rate in relation to that of the fourth quarter of 1920, and also to that of the immediately ensuing quarter; it is probably largely accounted for by the fact that Easter fell at the end of March and that registration of the

births which fell at the end of the quarter were delayed, some of them till the second quarter of the year, inflating the rate of that quarter to the detriment of the first.

Birth-rates of Different Parts of the Country.—The birth-rates of individual administrative areas tabulated in Table E are summarized in Table LX (*see* footnote to Table E).

Table LX.—Births in 1921 per Thousand Population.

	North.	Midlands.	South.	Wales.	England and Wales.
London	—	—	22·1	—	22·1
County Boroughs ..	24·0	23·6	19·8	24·9	23·5
Other Urban Districts	23·1	21·6	18·9	26·7	22·1
Rural Districts ..	23·7	21·2	19·1	22·6	21·4
All Areas	23·7	22·2	20·4	25·0	22·4

The highest sectional birth-rate recorded in Table LX is that of Wales, and next to it that of the North of England, while that of the South is lowest. Highest of all is, as usual, that of the smaller towns of Wales, where it was nearly 20 per cent. above the rate for the whole country, and lowest that of the smaller towns of the South, where it was over 15 per cent. below.

The constancy with which this order is maintained year after year is shown by the following table, which states the birth-rate of each section of the country as a percentage of that of the whole for each year from 1912 onwards.

Table LXI.—Birth-rate of Different Sections of the Country per Cent. of that of England and Wales, 1912–21.

	1912.	1913.	1914.	1915.	1916.	1917.	1918.	1919.	1920.	1921.
North ..	106	105	107	104	102	104	106	105	103	106
Midlands..	99	99	98	98	100	98	98	97	100	99
South ..	92	91	90	93	96	94	90	93	96	91
Wales ..	113	113	113	114	111	115	122	112	105	112

But though the order has not been changed in these comparatively large geographical areas, the figures show that they have been affected in varying degree by the forces which produced the comparatively violent changes in the general birth-rate of the past seven years. Wales, with the highest rates throughout, appears to have been least subjected to change ; the fall during the years of severest depression and the subsequent rise in 1920 were less than in either of the other divisions. In the South the fall during the war was less than it was in the more northerly districts, but unlike Wales it also participated in the considerable expansion of

1920. The relative proportions now registered for 1921 approximate very closely to those of the years immediately preceding the war. Within these geographical areas, however, Table LXII shows that, as compared with 1914, rural districts have improved at the expense of urban areas, especially of the larger and denser towns, the greatest difference of all being shown for London.

Table LXII.—Comparison of the Birth-rate of Different Sections of the Population in 1921 with that of the Previous Year and of the Last Year before the War, the Differences being expressed as Percentage Increases or Decreases.

	Decrease since 1920 per cent. of rate in 1920.					Increase (+) or Decrease (–) since 1914 per cent. of rate in 1914.				
	North.	Midlands.	South.	Wales.	England and Wales.	North.	Midlands.	South.	Wales.	England and Wales.
London	—	—	–17·8	—	–17·8	—	—	–9·1	—	–9·1
County Boroughs ..	–10·8	–12·9	–16·1	–6·4	–11·7	–8·0	–7·1	–3·9	–6·4	–7·1
Other Urban Districts	–9·4	–13·3	–15·6	–5·7	–11·2	–6·1	–7·3	–2·6	–8·2	–6·0
Rural Districts ..	–9·2	–11·3	–14·3	–7·4	–11·2	–4·8	+0·5	+1·6	–5·8	–0·9
All Areas	–9·9	–12·6	–16·7	–6·4	–12·2	–6·7	–5·1	–5·1	–7·4	–5·9

Sex Proportions at Birth.—Births of males in England and Wales numbered 434,895 and those of females 413,919; the proportion of male to female births was 1,051, 1,036 and 1,051 to 1,000 for legitimate, illegitimate, and total births respectively. The corresponding proportions for total births in each year from 1881 onwards and in groups of years since the commencement of registration are shown in Table C; the extreme range during the preceding 50 years was from 1,032 per 1,000 in 1898 to 1,060 in 1919. During this period the highest ratio recorded prior to the war was 1,043 in 1875. It will be seen that the exceptional preponderance of male births has fallen somewhat from its maximum attained during 1919, though it still remains much above its pre-war level.

The extent to which different classes of area or portions of the country have contributed to the increased preponderance of male births is shown in Table LXIII.

Table LXIII.—Male Births per 1,000 Female Births, 1921.

	North.	Midlands.	South.	Wales.	England and Wales.
London	—	—	1,045	—	1,045
County Boroughs ..	1,045	1,051	1,054	1,068	1,049
Other Urban Districts	1,054	1,060	1,049	1,057	1,056
Rural Districts ..	1,048	1,053	1,043	1,047	1,048
All Areas	1,048	1,055	1,047	1,056	1,051

As in previous years the great increase in excess of male births is common to the four sections of the country distinguished, but contrary to the general experience of this country in other years and of other countries, the ratio is lower in the rural districts than it is in the towns, though, as has been remarked on earlier occasions, there is so much variability in the relative experience in this matter that the figures of a single year afford no reliable guide to the ascertainment of any characteristic differences. Such divergence is illustrated in the above table, where the ratio of male to female births in the towns of the three divisions of England appears to be in inverse relation to the degree of urbanization, while those of the Welsh towns and of all rural areas suggest a directly contrary relation.

Illegitimate Births.—The births registered during 1921 include 38,618 of illegitimate children, a fall of 6,329 from the number in 1920, coincident with the decrease of 108,968 in total births. Illegitimate births have thus decreased by 14·1 per cent., while legitimate births have decreased by 11·2 per cent. As a result of these changes, the proportion of illegitimate to total births, which had risen from a minimum of 3·95 per cent. in 1901–05 to 6·26 per cent. in 1918, in consequence of the great reduction in legitimate without any corresponding reduction in illegitimate births before 1918, and a definite increase in their number in that year (Table B), has now declined to 4·55 per cent.

Some idea of the extent of illegitimacy in different classes of area and parts of the country may be gathered from Table LXIV, but judging by past experience the rates there shown are understated for the rural districts and probably somewhat overstated for the South, as compared with the more accurate measure of illegitimacy obtained by relating the births to single and widowed females of fertile age. The numbers of these, however, cannot be estimated with any approach to accuracy for the populations dealt with until the results of the age and sex tabulation for the 1921 census are available.

Table LXIV.—Illegitimate Births in 1921 per Thousand Population.

————	North.	Midlands.	South.	Wales.	England and Wales.
London	—	—	0·89	—	0·89
County Boroughs ..	1·15	1·04	1·04	0·77	1·09
Other Urban Districts	1·04	0·91	0·91	1·02	0·96
Rural Districts ..	1·17	1·07	0·92	1·22	1·07
All Areas	1·12	1·00	0·92	1·03	1·02

NATURAL INCREASE.

In 1921 the excess of births over deaths registered in England and Wales was 390,185, as compared with 491,652 in 1920, and 188,235 in 1919.

The reduction of 101,467 from last year's figures, the largest ever recorded in the history of this country, results principally from the fall in the birth-rate, offset as the latter was by a small saving on account of the slight reduction in mortality, viz., from 12·4 per 1,000 in 1920 to 12·1 in 1921. The numerical excess of births over deaths is nevertheless high in comparison with previous records, for apart from 1920, the 400,000 level was reached on only six occasions, all falling within the decade 1901–10, the maximum during that period being 433,643 attained in 1903.

In proportion to population, however, the excesses of earlier years were greater. That of the birth-rate over the crude death-rate was 14·5 for the whole quinquennium 1876–80, when it reached its maximum, whereas in the wholly exceptional circumstances of 1920 the same excess was only 13·1, and for the present year shows the considerable fall to 10·3 per 1,000 population.

UNITED KINGDOM.

Population.—The first complete census of the United Kingdom was taken in 1821, when the population numbered 20,893,584 persons; during the 100 years 1821–1921 this number has increased by about 126 per cent., the sum of the provisional census figures for Great Britain and of the estimated population of Ireland in June, 1921, amounting to 47,261,530.

The populations of the several divisions of the United Kingdom in 1921 (*see also* Table A) are as follows:—

Table LXV.—Population in the Middle of the Year 1921.

					Persons.	Males.	Females.
England and Wales*	..	..			37,885,242	18,082,220	19,803,022
Scotland*	..	..	..	..	4,882,288	2,348,403	2,533,885
Ireland	..	..	..	..	4,494,000	2,276,000	2,218,000

*Enumerated populations (preliminary numbers).

Marriages.—The marriages in the United Kingdom during the year 1921 numbered 383,348, corresponding to a rate of 16·2 persons married per 1,000 of the total population.

This rate was 3·1 per 1,000 below the corresponding rate in 1920, but 0·4 per 1,000 above the average rate in the ten years 1911–1920.

Table LXVI.

	Marriages, 1921.	Persons Married per 1,000 living.	
		Ten Years, 1911–1920.	1921.
England and Wales	320,852	16·6	16·9
Scotland	39,273	14·8	16·0
Ireland	23,223	10·8	10·4
United Kingdom ..	383,348	15·8	16·2

Births.—The births registered in the United Kingdom in the year 1921 numbered 1,062,735, and were in the proportion of 22·5 per 1,000 of the total population.

This rate was 2·9 per 1,000 below the corresponding rate in 1920, but 0·5 per 1,000 above the average in the ten years 1911–1920.

Table LXVII.

	Births, 1921.	Births per 1,000 living.	
		Ten Years, 1911–1920.	1921.
England and Wales	848,814	21·8	22·4
Scotland	123,201	24·1	25·2
Ireland	90,720	21·7	20·2
United Kingdom ..	1,062,735	22·0	22·5

Deaths.—The deaths registered in the United Kingdom in the year 1921 numbered 588,677, and were in the proportion of 12·5 per 1,000 of the total population.

This rate was 0·3 per 1,000 below the corresponding rate in 1920, and 2·2 per 1,000 below the average in the ten years 1911–1920.

Table LXVIII.

	Deaths, 1921.	Deaths per 1,000 living.	
		Ten Years, 1911–1920.	1921.
England and Wales	458,629	14·3	12·1
Scotland	66,210	15·4	13·6
Ireland	63,838	16·8	14·2
United Kingdom ..	588,677	14·7	12·5

Infant Mortality.—The following Table shows the proportion of deaths of infants under one year of age to 1,000 births in each division of the United Kingdom.

Table LXIX.

	Deaths under 1 year per 1,000 Births.	
	1911–1920.	1921.
England and Wales	100	83
Scotland	107	90
Ireland	88	77
United Kingdom	100	83

BIRTHS AND DEATHS AT SEA.

Marine Register Book.—In accordance with the Births and Deaths Registration Act of 1874 and the Merchant Shipping Act of 1894, Commanding Officers of ships trading to or from British ports are required to transmit returns of all births and deaths occurring on board their ships to the Registrar-General of Shipping and Seamen, who furnishes certified copies of such returns to the Registrars-General of Births and Deaths for England, Scotland, and Ireland. Similar returns are furnished to the Registrars-General of Births and Deaths by officers in charge of His Majesty's ships. These returns of births and deaths at sea constitute the "Marine Register Book." During the year 1921 this register was increased by the addition of 239 entries of birth and 2,650 entries of death.

REGISTRATION OF BIRTHS, DEATHS, AND MARRIAGES.

Progress of Registration.—The names in the alphabetical indexes of births, deaths, and marriages recorded in the national registers of England and Wales were increased during the year 1921 by 1,949,147, this addition raising the total of names in the indexes, which at the end of 1921 embraced a period of $84\frac{1}{2}$ years, to 141,996,482 (Table S).

Searches and Certificates.—Besides the certified copies of the registered births, deaths, and marriages kept in England and Wales pursuant to the Registration Acts, a large number of other registers and records are deposited in this Office under statute or other arrangement. A list of these various registers and records will be found on pages xxix–xxxii of the Annual Report for 1895. Searches may be made in any of these registers, and certificates obtained on payment of the prescribed fees.

Table LXX affords an indication of the extent to which the copies of the records kept in this Office have been utilized by the public for legal evidence of births, deaths, and marriages since 1866.

Table LXX.

Years.	Total Searches.	Gratui- tous Searches.	Searches paid for by Fees.	Certifi- cates Issued.	Amount Received.		
					£	s.	d.
1866 (52 weeks)	12,135	—	12,135	10,017	1,860	15	6
1875 (52 weeks)	26,356	—	26,356	20,282	3,879	15	6
1885 (52 weeks)	36,450	—	36,450	27,682	5,317	13	6
1895 (52 weeks)	53,289	—	53,289	35,727	7,200	12	6
1905 (52 weeks)	65,142	—	65,142	50,310	9,611	9	0
1906 (52 weeks)	64,340	—	64,340	49,429	9,458	6	0
1907 (52 weeks)	69,249	—	69,249	53,058	10,194	9	0
1908 (53 weeks)	72,370	—	72,370	54,870	10,550	8	0
1909 (52 weeks)	132,169	58,626*	73,543	54,674	10,568	8	0
1910 (52 weeks)	126,716	51,347	75,369	57,019	10,939	5	6
1911 (52 weeks)	140,496	65,491	75,005	56,347	10,875	6	0
1912 (52 weeks)	149,752	69,151	80,601	61,143	11,752	6	0
1913 (52 weeks)	150,540	71,225†	79,315	60,356	11,613	19	0
1914 (53 weeks)	188,040	104,593	83,447	65,817	12,482	11	6
1915 (52 weeks)	202,939	118,788	84,151	69,746	13,007	10	0
1916 (52 weeks)	303,334	197,669	105,665	88,265	16,379	17	0
1917 (52 weeks)	272,199	177,403	94,796	80,374	14,859	14	0
1918 (52 weeks)	255,462	146,504	108,958	90,898	16,889	0	0
1919 (52 weeks)	301,913	170,670	131,243	107,067	20,017	14	6
1920 (53 weeks)	284,194	149,447	134,747	108,684	20,415	0	0
1921 (52 weeks)	258,461	131,167	127,294	99,911	18,949	10	6

* Including some searches made in 1908.

† In addition, there were 91,917 gratuitous searches for National Insurance Audit purposes.

The 131,167 gratuitous searches during 1921 include 77,952 searches made for the purpose of verifying the ages of persons claiming old-age pensions, 52,265 made to assist dependents of men serving with H.M. Forces to produce evidence of marriage and of the births of children in connection with claims to Naval and Military Pensions, Separation Allowances, etc., and to verify the ages of certain classes of youths and men in connexion with service in the Army, Navy, and Air Force, and 950 made for other public purposes.

Offences against the Registration Acts.—In 1921 seven persons, on prosecution by order of the Registrar-General, were convicted under the Perjury Act, 1911, of offences in connection with registration. The offences for which convictions were obtained were as under :—

(a) Using as true a falsified certificate of birth	..	3
(b) Giving a false age when registering the death of an old-age pensioner	.. .. .	2
(c) Registering the birth of an illegitimate child as legitimate	.. .. .	1
(d) Failing to comply with a requisition to register a birth	.. .. .	1

In addition to the above cases proceedings were taken by the Director of Public Prosecutions and by Chief Constables in cases reported through the Registrar-General for offences including (1) bigamy, (2) the making of false declarations when giving notice of marriage, and (3) the false registration of the births of illegitimate children.

PARLIAMENTARY AND LOCAL GOVERNMENT ELECTORS.

In Tables T, U and V of Part II of the Statistical Review, 1921, are shown the numbers of males and females on the Register of Electors compiled under the Representation of the People Act, 1918, in respect of the qualifying period of six months ending on the 15th June, 1921.

The first return of electors on the Registers prepared after the passing of that Act was issued in 1919 by the Home Office (Parliamentary Paper No. 138 of Session 1918), and this was followed by a further similar return in 1920 (Parliamentary Paper No. 242 of Session 1919) in respect of the third Register, prepared for the qualifying period ending on the 15th June, 1919. In both returns statistics were given of the Parliamentary and Local Government Electors in respect of each Parliamentary constituency in the United Kingdom.

In addition to these returns, the numbers of the Parliamentary electors, male and female, on the Spring Register for 1921, prepared for the qualifying period ending on 15th December, 1920, were published for each Parliamentary County, Borough and Division in England and Wales, side by side with their respective total populations in the Preliminary Report of the 1921 Census for England and Wales. The comparison of electorate with total population is being further extended in the substantive Census reports as they are issued by the addition of columns showing the ratio of electors of each sex to the population in the several age periods (21 and over in the case of males and 30 and over in the case of females), governing the franchise under the Act.

The particulars issued in Part II of the present Annual Review in respect of the Autumn Register for 1921 have been taken from statements furnished to the Registrar-General by the Registration Officers of the several areas, or in the case of a University forming the whole or part of a University constituency, by the Chancellor, Registrar or other officer dealing with Parliamentary registration.

The expressions "Parliamentary electors," "Local Government electors" and "persons on absent voters list," have in the tables the same meaning as in the Act. The expression "men registered for business premises qualification" means men who are qualified to be registered as occupiers of business premises and are not resident in the qualifying premises.

The Registration Officers were instructed to enter in the statements from which the Return has been compiled the total number of names on the Register without any deduction in respect of persons who are registered in more than one Parliamentary or Local Government constituency, and, further, to take care to secure that the names of "out voters" (that is, persons whose names appear twice in the Register, by reason of a claim under Rule 24 of the First Schedule to the 1918 Act) should be counted once only.

Table T refers to Parliamentary electors, and shows for each Parliamentary constituency in England and Wales, including the University constituencies, the number of males and females on the Register, and also the numbers registered in respect of business premises qualifications and the numbers on the absent voters list.

Tables U and V refer to Local Government electors, Table U showing the numbers of each sex registered in respect of every sanitary area, *i.e.*, County Borough, Metropolitan Borough, Municipal Borough, Urban District and Rural District in England and Wales, and Table V giving similar information in respect of all Poor Law Parishes or Unions.

The totals of the Autumn 1921 Registers are shown in the following summary in conjunction with the figures of previous Autumn Registers made since the passing of the 1918 Act.

England and Wales.

Regis- ter	Parliamentary Register (including University Constituencies).					Local Government Register.		
	Persons.	Males.	Females.	Men registered for business premises qualifica- tion. (included in Cols. <i>b</i> and <i>c</i>).	Persons on Absent Voters List (included in Cols. <i>b-d</i>).	Persons.	Males.	Females.
<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>	<i>k</i>
Autumn								
1918	17,222,983	10,281,054	6,941,929	159,013	3,362,028	13,930,130	6,998,665	6,931,465
1919	17,465,638	10,234,887	7,230,751	205,461	1,157,061	14,361,123	7,176,019	7,185,104
1920	17,584,552	10,176,750	7,407,802	203,471	254,866	14,712,453	7,364,912	7,347,541
1921	17,795,784	10,237,344	7,558,440	194,737	185,227	15,019,348	7,527,861	7,491,487

A feature of this table which appears to call for explanation is the reduction which is shown for the male Parliamentary electorate from 1918 to 1920. Normally the numbers of each sex may be expected to increase year by year in correspondence roughly with the increase of the total population within the prescribed age periods. Under the 1918 Act however, special provision was made for the registration of persons serving as members of the naval, military and air forces, modifying the general residence qualification and extending the franchise by substituting 19 in place of 21 as the age governing the franchise in the case of men. The numbers affected by this provision are shown in col. *f* of the Table (persons on absent voters list), the figure being at a maximum in 1918. The yearly increments to the male Register which would in ordinary circumstances have been recorded in the years 1919 and 1920 in respect of men attaining the qualifying age of 21, and which would have been well in excess of the corresponding decrements on account of deaths, etc., were thus largely discounted by their registration at a lower age in 1918, with the result that the decrements were in excess of the new additions and decreases in the total electorate were recorded. Further the modification of the residence qualification, made with a view to preventing the disfranchisement of men on active service abroad, resulted in some duplicate registration in the early years, which has been reduced with the successive revisions of the Registers.

Including a certain amount of plural representation in the case of those persons registered in more than one constituency by reason of their possessing the necessary residence or business qualification, or being entitled to be registered in respect of a University constituency, the total Parliamentary electorate of 17,795,784 represents 47·0 per cent. of the total population, or 56·6 per cent. of the male and 38·2 per cent. of the female

population; in the case of the rather more restricted Local Government franchise, the numbers are somewhat less and the proportions correspondingly lower, the total electorate being 39·6 per cent. of the whole population, or 41·6 per cent. and 37·8 per cent. in the case of males and females separately.

Of the total of the Parliamentary Registers, the bulk, viz., 17,758,700, represents the aggregate voting strength in the 509 geographical constituencies into which England and Wales is divided, the balance of 37,084, representing the five University constituencies. Eleven of the Boroughs, and three University constituencies, however, each return two members, so that the total representation in Parliament is by 528 members, 520 in respect of the geographical divisions, with an average electorate of 34,151 per member, and eight in respect of the Universities, with an average electorate of 4,636.

MISCELLANEOUS.

Other tables appearing in Part II of the Annual Review which have not formed the subject of special comment in the foregoing pages are as follows:—

Table R, showing the balance inward or outward of passenger movement into and out of the United Kingdom for each of the years from 1902-1921.

Table W, showing the Area, Population, Births and Deaths in British Islands other than Great Britain and Ireland from 1902-1921.

Table X, showing the Population, Births, Deaths, Infant Mortality, Marriages and corresponding rates for the year 1921 in the several portions of the British Dominions:—

The Commonwealth of Australia,
Canada,
New Zealand,
South Africa.

Table Y, showing the 1921 Census Populations, and the intercensal rate of increase or decrease of the several Dominions, Colonies and Protectorates (including mandated territories) in the British Empire.

Table Z, showing the latest Census Populations and intercensal rates of increase or decrease in various Foreign Countries.

Table AA, showing the changes which have taken place in the boundaries of Administrative and Poor Law Areas in England and Wales during 1921.

Appendix, associating, for each Poor Law Union or part of a Poor Law Union within the Equalisation Area proposed by the Royal Commission on London Government,* certain summary statistics relating to Population, Housing, Pauperism, Births, Deaths and Infectious Diseases.

*Report, Cmd. 1830, 1923.

METEOROLOGY.*

AN ABNORMALLY DRY YEAR.

During the year 1921 the most conspicuous occurrences of the weather were the unparalleled shortage of rainfall, which was especially pronounced in February and June; the heat and drought of July; the abnormal warmth of the early days of October; the dense fogs which prevailed during the latter part of November; and the destructive gales which occurred at the close of December.

In all parts of the British Isles the abnormally mild weather which set in just before Christmas was continued nearly throughout the whole of JANUARY. During the month, moreover, the type of weather was persistently cyclonic, so that the unusually high temperatures which were widely recorded were accompanied nearly everywhere by much precipitation. A feature of the month was the persistence of mild, damp winds from the south-west or west, with much low cloud. During FEBRUARY the pressure distribution over north-west Europe was largely dominated by a series of important anticyclones and as a result strong winds and gales were rare. A noteworthy feature of the month was the pronounced deficiency of the rainfall. A further conspicuous feature was the high mean temperature. As in the two preceding months there was a marked absence of severe wintry weather during MARCH, and the general character of the month was mild and showery. From December 19th to March 29th, a period of exactly 100 days, not a flake of snow fell at Sheepstor, on Dartmoor, an event unprecedented in the memory of the oldest inhabitant at this high-level station. The pressure distribution underwent some very marked fluctuations during APRIL, and the weather and temperature were in consequence very changeable. As a whole the month was sunny and dry, but between the 15th and 20th very cold weather was general and snow fell in many places. Night frosts were frequent and reports in the press showed that damage was done to crops in many parts of England. In MAY the weather was on the whole fine and dry over the greater part of the country, but unsettled in the extreme north-west. There was continuous fine weather in southern England from the 16th to 25th. An exceptionally severe frost for so late in the season was experienced in many parts of Scotland, eastern Ireland, and northern England on the 5th. The persistently dry weather which characterised the Spring was maintained throughout JUNE, and in all districts there was a scarcity of rainfall. In some places round the south coast the drought was absolute, and in parts of Sussex the month was rainless. Except in the extreme north-west of the British Isles JULY was remarkable for the heat and drought which prevailed during the greater part of

* Furnished by the Director of the Meteorological Office.

the month. In the south no real break in the drought occurred. In every district in England and Wales it was the seventh month in succession during which the temperature was above the normal, and the fourth during which precipitation was deficient. Conditions were generally unsettled throughout AUGUST and the temperature was considerably lower than in July. In the north and west the rainfall was large, but in the south-east of England it was again below normal. The fine and warm weather which proved so characteristic a feature of the year under review, but which received a temporary check during August, was again in evidence during the greater part of SEPTEMBER. Notable features of the month were the gales and thunderstorms which were experienced over a wide area during the night of the 11th–12th, when 50mm. of rain fell at Kew Observatory, 53mm. at Tottenham, and 57mm. at Enfield. The outstanding feature of OCTOBER was the unprecedented warmth which occurred in the southern parts of the Kingdom during the early days of the month. Except in the extreme north-west the month generally was sunny and dry. NOVEMBER brought to a close the long succession of months with a mean temperature above the normal, a feature which in England had characterised each month since the beginning of the year. The long series of months in south-eastern England with precipitation below the normal continued, however, unbroken. In Great Britain the general character of the month was cold, dry, and foggy; but rather mild in Ireland. With the exception of the opening days of the month a westerly type of weather prevailed during DECEMBER and mild and rainy weather was experienced over the whole of the British Isles. The south and east were, however, less affected than the north and west, but in common with every month of the year precipitation was definitely deficient in the south-east of England.

FURTHER INFORMATION.—Tables relating to meteorological elements are given in Part I. (Tables 28–30). A description of the weather of each month appears in the Quarterly Return of the Registrar-General, and values of rainfall and mean temperature at certain large towns are to be found in Table V. of that Return, values for the year being shown in Table XVII of the Return for the Fourth Quarter.

Charts showing the distribution of pressure, temperature, sunshine and rainfall for the year, together with summaries of the observations at numerous stations will be found in the Annual Summary of the Monthly Weather Report issued by the Meteorological Office.

A list of the publications of the Meteorological Office will be found in “List M” issued by H.M. Stationery Office.

